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IN THIS ISSUE

Editor :
SUTINDER SINGH

Sustainable Information Infrastructure Development

A Holistic Approach

Sanjaya Mishra*
Manoj K. Joshi**

Introduction

Control over information is key to the development of a nation. All government policies and decisions are based on the information available with them. And it is in this context, information has been the focus of policy planners and administrators all over the world. The distinction between a developed and a less developed country today, perhaps, lies in the control over generation, dissemination and accessibility to information and development of a strong information infrastructure. Traditionally, libraries and information centres have performed role of basic information infrastructure. With the development of technology, new media, methods and practices have entered the realm of information infrastructure, e.g. the development of computer and communication technologies have added a totally new perspective to the information infrastructure with Internet and Word Wide Web. Due to these new added dimensions into information arena, the role of Library and Information (L&I) professionals has also changed considerably. Therefore, it is essential to discuss and zoom in issues of concern to sustainable development of information infrastructure. Let us discuss the role of L&I professionals in this changed scenario.

Paradigm Shift

There has been a societal shift[1] (*Table* 1) from the industrial age to the information age. This societal shift has influenced emergence of a new set of professionals who can contribute to organizational effectiveness. Information work has also undergone paradigmatic shift[2] in its domain from library science to information science (*Table* 2), keeping pace with the social change. Another significant feature of this aspect is that while library science *focuses* basically on documents, information science *deals with* information contained in any kind of document.[3] Perhaps, this paradigm shift is a major indication of sustainable development in our field. But in Indian context the shift has perhaps, not been taken care of through research, education and training.

Industrial Age	*Information Age*
Standardization	Customization
Bureaucratic Organisation	Team-based organization
Centralized Control	Autonomy with accountability
Adversarial relationships	Co-operative relationships
Autocratic decision making	Shared decision making
Compliance	Initiative
Conformity	Diversity
One way communication	Networking
Compartmentalization	Holism
Parts oriented	Process oriented
Planned obsolescence	Total quality
CEO is "King"	Customer is "King"

Table 1 : Societal Shift

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The Indispensable Textbook

Cima M. Yeole*

The new communication techniques and devices that have been developed as a result of the electronic revolution hold tremendous potential of replacing the printed resources and books on which education has depended so long, but we believe that this is unlikely to occur — rather, printed materials of many different kinds — those now existing and those yet to be developed, will continue to serve educational and training purposes indefinitely. Increasing use will also be made of systematically designed media resource units that combine the best qualities of print and nonprint media.

The Print Media Technology

Print media is one of the oldest and most widely used form of educational resources They can be distinguished from other forms of media by the fact that they are composed of sheets or leafs on which information is displayed in rows of symbols. Print media includes — textbooks — its allies newspaper and magazines, reference books (dictionaries, encyclopedias), specified purpose material i.e programmed learning material and pre-produced material for distance education.

John Guttenberg of Germany has been credited with playing a major role in bringing the mass printing of books as early as 1468 As a result the book printing industry spread quickly throughout Europe and all over the world There are many advancements and improvements in technology right from manufacture of paper to binding of books, they have all contributed to the dissemination of literacy and the spread of knowledge.

We are in the age of computers and satellite communication — these are the most advanced and powerful technologies, but they have not been able to make much headway in the classroom To this day the most powerful and pervasive educational technology is still the textbook — as this age old technology has emerged with new strength and vigour.

With the emergence of the National System of Education in 19th & 20th centuries — graded order textbook series were used by the school system. These were used to define the goals, standards and methods of instruction. Texts impose uniformity on the school curriculum and standardise the school experiences offered to the students. Through them curricular and cultural homogeneity was created within nations based on common myths and symbols, internalized by the school population. The historic retrospect of the text thus indicated four factors which influenced the development of the textbook namely —

1) Advancement in print technology,
2) Layout of the textbook,
3) Application of learning theories, and
4) Search for national identity through national system of education

This is evident in the National Policy of Education 1986, with its emphasis on the common core curricular areas and centralized textbook production.

The textbook is a versatile product, it provides convenient and random access to the messages it contains, users control the process by which they gain the information they seek. Paging and indexing permit them to move ahead, to skip, or to dwell at length, to skim quickly, or to read slowly, perhaps with exceptional care. Books are portable, they remain fairly economical to buy and maintain. They often contain excellent visualizations of concepts and information with accompanying verbal elaborations and explanations.

Textbooks are used as (i) Basic texts and thus as the chief source of information in particular courses, (ii) Co-basic texts — with two or more titles adopted and used complementarily in studies, and (iii) as supplementary and enriching sources only

Advantages of Textbooks

Textbooks offer several advantages when used for classroom teaching or instruction:

1) *Indivndualization of Instruction* : Wherein students are able to proceed at their own rates and to a limited extent according to what they are interested in studying, they may choose what they require. The attractive layout, illustrations, graphics, pictures etc all make the text motivating and interesting to read.

2) *Economy* : Textbooks are used and reused, therefore the actual per-pupil costs are quite low and thus inexpensive, it contains a combination of graphics like maps, charts, diagrams pictures etc.

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3) *Organisation of Instruction :* Textbooks help organize instruction by providing common reading experiences, suggested activities, recommended reading and questions. Expertly written textbooks give unity to classroom instruction.

4) *Tutorial contribution :* Teachers often maintain that textbooks help students how to read better, to study, to weigh evidence and to solve problems. They advise using the suggested activities to stimulate and guide different kinds of learning.

5) *Improvement of Teaching :* Textbooks are also regarded as helpful in improving teacher practices especially through suggestions contained in teacher manuals and guides.

Criticism of Texbooks

Along with all the niceties of the textbooks, several criticisms of the textbooks have also surfaced. It is sometimes said that by presenting materials in logical, predigested form, textbooks relieve learners of much need to think, to do their own organizing or to arrive at independent conclusions. Textbooks are also found to ossify subjects by treating them too sketchily and providing only minimal information, thus stimulating little interest on the users' part to pursue any of them very far.

Teachers reading standard textbooks paragraph by paragraph, in the classroom and commenting on it was a very common scene till the medieval period. This was known as 2x4 teaching — which meant the two covers of the book and the four walls of the classroom. This traditional way of using the textbook has not undergone much change even today. Although the traditional use of textbooks differs from subject to subject, and teacher to teacher, some of the common activities involved in the usage of textbooks are as follows :

1) Reading passages from textbook & commenting on it.
2) Asking students to read the text silently or aloud.
3) Marking out answers in the text, for assignment or giving assignments given at the end of the lesson.
4) Searching for answers in the text for the given questions.
5) Many teachers use the textbook as syllabus and restrict their teaching to the content given in the textbook only.
6) Writing out paragraphs from the text as classwork.
7) Using the textbook as a source of home assignment either for reading or for various types of exercises.
8) It may be used as a source for identification of problems for students to work on their own.

The above uses of the textbook involve reading, reciting and copying which chiefly promote rote memory, they do not aim at optimizing human learning.

The claim that textbooks ignore instructional innovation, and yet influence teaching more than they should, can today be well challenged. Teachers are faced with classrooms that are crowded with students from different socio-economic backgrounds, having varied likes and dislikes, interests, abilities and aptitudes. Textbook teaching in which the principal learning activities are characterized as a deadly routine of assigned reading and recitation need to be revamped by putting the textbook to innovative uses. This will not only revitalize and augment students' interest and learning of the subject but will also trigger off creative instincts in the teachers.

Textbooks' Innovative Uses

A planned change in the existing traditional routine practice of textbook utilization is considered here as the innovative use. There are a variety of innovative ways in which textbooks may be used in the classroom. A creative teacher may invent his or her own innovative practices—hence whatever activities are suggested below are illustrative and not exhaustive.

1. *As resource or reference :* Textbooks of higher classes can be used as resource or references books or even used for general reading by junior classes. Whereas the students of higher classes may evaluate the textbooks of lower classes.
2. *Pictures, illustrations in the text :* Teachers can organize, discussion, story telling, picture analysis etc on the texts illustrations. The students may suggest modifications of illustrations and also suggest places or points in the text where illustrations are needed.
3. *Challenging the text :* Teachers may encourage students to challenge the opinions, facts, thoughts, statements given in the text, solicit 'why' questions after each sentence, raise 'if' & 'then' type

of questions based on the content and find out the inadequacy and inaccuracy of the text.

4. *Word building* : The teacher can organise word building activities by selecting known/unknown words from the text, asking students to make a list of words that may be prepared from alphabets of the selected words. They may select synonyms, antonyms, create mnemonic devices to aid memory, make use of free and continuous association devices like two or more words in the form of visual images, or substitute a word by visual image e.g. to remember the word 'Darwin', one can remember the words 'Dark' 'Wind'. Ridiculous association is another technique of word building—association of two words 'Tree' & 'Glove', imagine a tree laden with gloves. This is a ridiculous association. The teacher should ensure that students know the concept represented by each word.

5. *Interchange of views* . Textbooks are generally written for a specific subject. In an innovative way they can be used interchangeably. The science, mathematics, history, geography texts can be used for science teaching.

6. *Highlighting important points* : Students may use underlining, highlighting pens to mark important sentences, words. Important features of pictures may also be coloured.

7. *Use of preliminary & reference section of the textbook* · Students may learn to use the preface, content & index of textbooks If the book does not have an index — students may be asked to prepare it.

8. *Searching for values* : Students may be encouraged to search for values underlying the text, or as desired by the author. They may be involved in an exercise of relating values, or finding out if the same material violates other values.

9 *Framing questions* · Students may be asked to frame a variety of questions (descriptive & objective type) on the subject They can evaluate the questions given after each lesson & reframe them.

10. *Supplementary assignments or activities* : Teachers can give a variety of activities as assignments such as—suggesting alternative titles giving additional examples, preparing supplementary materials etc.

11. *Linking subjects* : Teachers may link the content of one textbook with the content of the textbooks of other subjects. The story of the 'crow & the pebbles' from the English text may well be linked with the underlying scientific principles.

12. *Conduct of discussions* : The teacher can conduct classroom discussions on quotations, values, morals of stories, characters, events etc.

13. *Developing visual literacy through pictures in text* : The teachers may help develop visual literacy in the students through picture observation. Students may be asked to first observe each object in the picture, then recognize its state & later see each object in relation to the others in the picture. After going through this activity students will be able to develop a clear mental picture. The student may be asked to predict the thoughts, conversations, feelings of the characters in the pictures.

14. *Simplification* · The teachers may encourage students to simplify and rewrite the text in such a manner as to be comprehensible even by a layman.

Organizing Innovative Activities

The innovative activities suggested above may be organized in more than one way depending on the nature of the activity. Some of them may be easily incorporated in the routine classroom teaching. The other methods may be individual or group projects, discussions on pre & post-activities, assignments, workshops, seminars, field trips, library work, debates, displays, students bulletin boards etc.

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Induction-Training Programme for Newly-Appointed College and University Lecturers
An Experiment at Kuvempu University

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J. Made Gowda**

Introduction

The University Grants Commission (UGC) directed all the state government and union territories to appoint the best candidates for teaching posts. A postgraduate student who has secured 55 per cent marks in his postgraduate degree examination would be eligible to take the National Eligibility Test (NET). To become eligible for applying for lecturership, he has to pass the National Eligibility Test. Candidates would be required to score 50 per cent minimum marks to pass the NET. Such a plan is aimed at filtering sub-standard candidates who are not serious about taking up teaching as a profession and thereby enhance excellence in higher education.

In the present curriculum of our postgraduate courses (M.A., M.Sc., M.Com., M.B.A., etc) basic ideas of college or university teaching are not incorporated. The present National Eligibility Test is also not testing the candidate's teaching ability. In this situation, there is a fear that the candidates who pass the NET will enter, after appointment, the college or university classes straightaway, without ever realising the nicety of their profession How are these newly appointed teachers prepared mentally? Is it not surprising that these newly-appointed college and university teachers are hardly conscious of this crucial problem? Most of these candidates who have passed the NET are not born teachers. They are not even profound scholars. In this situation, it was thought desirable to organise induction-training programme for newly-appointed college and university lecturers who were entering lecture classes for the first time in their life.

Need and Importance

The key factor in determining the quality of higher education is the teacher. Research has established the importance of the teacher quality above all others in improving the quality of education. From the Radhakrishnan Commission (1948-49) to National Policy on Education (1986), great emphasis has been placed on the teacher and his overall development in determining the standard of education which provides crucial inputs to national development, particularly in terms of intellectual self-reliance.

In this context, many educationists have identified the teacher's role. For the overall development of the system as such, teachers and their development have been increasingly identified as an important factor in facilitating the performance, in augmenting effectively their existing roles, and in providing an opportunity to the staff to adapt themselves to the changing roles and responsibilities as well as to equip themselves for increased obligation and career adjustment for bringing about overall job satisfaction.

The National Policy on Education (1986) considered the quality and status of teachers as of vital importance. The policy stated "The status of teachers reflects the socio-cultural ethos of a society. It is said that no people can rise above the level of its teachers". Standard of education and training that is imparted to teachers during their pre-service period determines the quality of teachers. In order to develop the required competence, a teacher has to be trained before he enters the teaching profession The document on Plan of Action — National Policy of Education (1986) also emphasised that "it is proposed to organize specially designed orientation programmes in teaching methodologies, pedagogy, educational psychology etc, for all new entrants at the level of lecturers.....". The same idea was reinforced when the New Education Policy was revised in 1992.

College and university teachers occupy a challenging position in the education process. They play a vital role in the all round development of the personality of students by exercising personal influence. The knowledge, skills, the ability to apply science and technology in solving educational problems, professional competence and attitudes make substantial difference to the quality of education provided by them. College and university teacher education is, therefore, an important input in the professional preparation and growth of competent teachers for higher education.

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Today the role of college and university teacher is being viewed as a facilitator of learning or a creator of learning environment. His role as a disseminator of information is being questioned in the light of the modern pedagogical and androgogical theories. Scientific analysis of teaching and systematic procedures for the development of analysed components by training have raised expectation of more effective college and university teachers in the classrooms. The only method of teaching employed by the teachers is the lecture method which, usually remains drab, dull and lifeless. Most of them are hardly able to infuse life in the classroom situations.

Most of the college and university teachers in India take up their jobs without any knowledge of pedagogy, educational psychology etc. They learn the techniques of teaching either by trial and error method or by following the ideas set up by their teachers. This system has worked so far since there is no accountability. Neither the Department of Collegiate Education nor the University has evaluated the college and university teachers seriously As a result, there has been a steady erosion of academic standards both in the teaching fraternity and the student community

There is a mistaken belief that mere postgraduate degree is sufficient for college and university teachers to have mastery over their professional skills. Most of the college and university teachers also think that teaching can be adequately done without depending on any other academic sources. But instances are not rare where even college and university teachers with the highest academic excellence fail miserably in the classroom. It all points to the lack of proper training

Teaching is a highly complex activity which involves various pedagogical techniques A college or university classroom comprises a set of heterogeneous students with a wide range of learning abilities. It is a mini world in itself. Uninspiring, uninteresting and drab teaching certainly leaves the students unmoved. Lack of confidence, competence, command and control over the subject places the college and university teacher in a vulnerable position.

It cannot be denied that knowing the subject matter and communicating it effectively for better learning are two interdependent but altogether different skills Lack of exposure to effective teaching methods and other significant aspects of teaching renders many college and university teachers subject to stiff criticism by the students and their parents. Their ability as effective teachers is being questioned. The hypothesis that teachers are born, not made is being proved wrong, because, by providing the theoretical and practical orientation in the current trends in educational technology, instructional methodology, evaluation methodology and andragogy (art and science of teaching adults) the teachers may be excellent facilitators of learning. The number of born teachers is less in our country. Teachers take up teaching profession at the highest level, without any practice in teaching.

Practice is, of course, a prerequisite for many learning activity. Much of a teacher's day is devoted to learning activities that can be improved through practice. However, at present almost all the practice of college and university teaching is on-the-job practice But, other professions have built into their training programmes opportunities for safe practices.

From 1st April 1996, the Bar Council of India has introduced a one-year pre-enrolment training mandatory for candidates entering into legal profession after obtaining a Law degree. Every medical student has to work as intern in a recognised hospital to become eligible either for private practice or for job. The actors have closely supervised rehearsals before their public performance. The aircraft pilot has his Link trainer. Government of Karnataka has prepared a plan to train the constables about police duties. Bombay University has also introduced a three-month certificate course for the legislators on the theory and practice of parliamentary proceedings. Such a course will be beneficial to the youngsters, particularly upon entrance to the state assemblies and parliament. The college and university teacher, who is beginning his service in college and university's classrooms, however, must learn how to teach amid the hurly-burly of his scheduled classes. Such safe practice will provide college and university teachers a safe setting for the acquisition of the techniques and skills of their profession.

Even present postgraduate degrees in different subjects can by no means make one a good classroom teacher, for these are mere extension of their regular duties. A college and university teacher even after procuring the said degrees remains ignorant in the art and science of teaching in classrooms.

Quality is the key to success. Quality education is needed if our country has to keep pace with other countries of the world. The competitiveness in the system must also encourage optimisation of the education system. Those who undergo any programme of higher education must become contributing members of society and be prepared to assume responsible citizenship in a democracy The intelligent man (college and university teacher) should encourage the useful man by proper motivation. Pre-service training is very essential to teachers, is a truth, universally acknowledged.

Physician, heal thyself, teachers, teach yourself — are almost *obiter dicta*. If a person has knowledge, it can be transmitted to others. If the teaching methodology is interesting, suitable, rewarding and full of variety in its approach, certainly any student can be made to get many new learning experiences in the classrooms and laboratories.'

Universities like Indira Gandhi National Open University and different other organisations are organising many induction-training programmes for quality improvement in higher education. The National Assessment and Accreditation Council is also establishing links with all such professional bodies to coordinate and develop sound criteria for quality education.

Considering the role that teachers in colleges and universities are required to play in the socio-economic development of the country, the need for their professional development cannot be over-emphasized Professional development of teachers should have the twofold aim of improving their knowledge awareness and motivating them, so that they perform their functions more efficiently. Unlike teachers in schools, teachers in colleges and universities do not come with prior training for their job. Although a B.Ed type of course is neither desirable nor necessary for teachers in colleges and universities, it is important that they undergo some course at the beginning of their profession. This would enable them to have required orientation about their profession and various issues relevant to higher education.

The Rastogi committee has also recommended the need for bringing the concept of induction-training programmes for the teachers through Academic Staff Colleges. The training should be imparted soon after recruitment The committee further recommends that Academic Staff Colleges may continue to organise such programmes at the beginning of the academic session as well as some others during the winter break so as to provide opportunities to newly-recruited teachers for attending these programmes.

Objectives

1. To enable college and university teachers to understand the significance of education in general and higher education in particular in the global and national context;
2. To help college and university teachers to understand their role in achieving the national goals of higher education;
3. To make the college and university teachers understand the linkage between education, and economic and socio-cultural development with reference to socio-political structure of the Indian society;
4. To make them aware of the developments in their specific subjects;
5. To provide college and university with a safe setting for the acquisition of the techniques and skills of their profession,
6. To enable college and university teachers to understand the organisation and working of University Grants Commission, their college/university and different autonomous organisations and help them perceive their role in the total system
7. To enable college and university teachers to utilise opportunities for development of personality, initiative and creativity,
8. To make college and university teachers 'Professional' in their approach to their job; and
9 To make them aware of the civil service rules of their state.

Academic Council of Kuvempu University passed a resolution to organise induction-training programme for newly-appointed lecturers The time-table (Annexure 1) was also submitted to the University On experimental basis the Syndicate of Kuvempu University decided to organise induction-training programme for newly-appointed lecturers of postgraduate departments and constituent colleges

An Experiment

The Kuvempu University organised induction-training programme for 4 days from September 12 to 15, 1997 Thirty seven teachers working in postgraduate departments and constitutent colleges participated in the programme. All these teachers were appointed after 1st July 1996. Out of 37 teachers 13 were doctoral degree holders.

The participant teachers were given a chance to listen to the lectures on the following topic: Objectives of higher education, Freud's views on personality, Maslow's views on motivation, Philosophy of education, Preparation for teaching and laboratory setting, Curriculum planning, Concept of evaluation, Preparation of a question paper, Developing scientific temper, Karnataka State Civil Service Rules, Organising tutorials, ICSSR fellowships and research project schemes, National Assessment and Accreditation Council and the teachers, Academic audit, University-Industry interface, Communication skills, Study skills, Library services for teachers and researchers and Act and Statutes of Kuvempu University.

Every lecture was followed by discussion in which all the teachers actively participated and of-

fered suggestions for the improvement of the programme.

Suggestions

At the time of organising induction-training programme for newly-appointed lecturers in future, the following suggestions should be taken into consideration.

1. To maintain good interaction in the programme, it is better to restrict the number of participant lecturers to 30.
2. It is better to organise induction-training programme for the lecturers of a single faculty (Arts, Commerce, Science and Technology, Engineering, Education, Languages, Medical, Agriculture, Law, etc.). Whenever the number of newly-appointed lecturers reaches 25-30 in a particular faculty, the course may be organised for them.
3. Useful reading material should be given to all the participants.

Conclusion

Renewal of knowledge and constant exposure to recent development, changes and reforms in the methods of teaching are crucial factors for progressive teaching. It is proved that resourceful teacher holds the attention of the students for a longer time. All the newly-appointed teachers have to be oriented to effectively meet the challenging needs of the present society Every university should give serious thought to keep the newly-appointed lecturers informed of the latest progress and developments in their subjects and methods of teaching A sensible, planned and well-organised induction training programme could take the newly-appointed lecturers a long way in their career and help them provide variety of learning experiences The course should also provide clarity of vision, broader perspective and inculcate in college and university teachers the faith, that, as teachers they could do something for the society Time to time the course may be modified on the basis of suggestions of experienced teachers, resource persons and participant teachers.

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Annexure I

SUGGESTED TIME-TABLE FOR THE INDUCTION-TRAINING PROGRAMME FOR NEWLY-APPOINTED COLLEGE AND UNIVERSITY LECTURERS

DAY	TIME			
	10-30 - 11-30 A.M.	11-45 - 01-15 P.M	02-15 - 3-45 P.M.	04-00 - 5-30 P.M
I DAY	Inaugural Function	National Policy on Education - 1986	Objectives of Higher Education	Philosophy of Education
II DAY	Psychology of Adolescence and Learning	Development of Personality	Group Dynamics	Curriculum Planning
III DAY	Preparation for Teaching and Laboratory Setting	Presentation of Model Lecture*	Presentation of Model Lecture*	Presentation of Model Lecture*
IV DAY	Presentation of Model Lecture*	Practice of Lecture**	Practice of Lecture**	Practice of Lecture**
V DAY	Practice of Lecture**	Practice of Lecture**	Practice of Lecture**	Practice of Lecture**
VI DAY	Practice of Lecture**	Skill of Writing Instructional Objectives	Skill of Explaining	Skill of Achieving Closure
VII DAY	Effective Use of Audio - Visual Aids	Developing Creativity	Basic Principles of Computer	Techniques of Conducting Research
VIII DAY	Supervision of Extra Curricular Activities	Administrative work of the College/Department	Act and Statutes of the University	Different Bodies of the University
IX DAY	Teacher Performance Appraisal	Professional Ethics	Constitution and Functions of the U G.C	Organisation and Functions of the National Assessment and Accreditation Council
X DAY	Organising Seminar	Techniques of Note Taking and Note Making	Using Countrywide Classroom Programmes	Reading Skills
XI DAY	Providing Study Tips	Developing Scientific Temper	Role of the teacher in Present Society	Teacher-Student Relationship
XII DAY	Autonomy and Accountability	Professional Organisations of College & University Teachers	Concept of Evaluation	Examination System of the University
XIII DAY	Preparing Question Paper	Environmental Pollution and Management	Inter University Centre and Information Centres	Fellowships and Schemes of Major and Minor Research Projects
XIV DAY	Current Issues and Trends in Higher Education	College/University Library Services for Teachers and Researchers	State/Central Civil Service Rules	Valedictory Session

* Each model lecture will be presented by one resource person for 60 minutes The participant lecturers interact with the resource person for 30 minutes and discuss about the model lecture

** Each participant lecturer has to present a lecture on any topic of his interest in 10 minutes. Immediately after completion of 10 minutes lecture the participant lecturer will get feedback by the resource person and participant lecturers Four lecturers will practice in one period

Medicine : Retrospect & Prospect

Prof. J.S. Bajaj, Member, Planning Commission, Government of India, delivered the Convocation Address at the Second Convocation of the Nizam's Institute of Medical Sciences, Hyderabad. He said, "The spectacular advances such as evolution of genetic intelligence, genomic imprinting, transgenic livestock as bioreactors, and gene transfer techniques for use in genetic vaccination, are likely to open new vistas in the understanding and practice of medicine in the next century. At the same time, the present and emerging technologies bring medicine at the crossroads where physician's obligation to alleviate human suffering may come in direct conflict with the possible future extensions to areas of concern such as *eugenics*." Excerpts

The last four decades which span my own professional career have witnessed a quantum leap in our knowledge of biomedical sciences. Indeed, it may be justifiably argued that the cumulative import of advances in scientific knowledge in the last four decades may have even exceeded that due to progress of medical sciences during the last four centuries, including Harvey's first demonstration of circulation of blood. Further, if the award of Nobel Prizes during the latter half of the twentieth century is used as a yardstick, two fields of medical knowledge stand out most prominently. These are endocrinology and genetics. The advancements in these two disciplines have been made possible by newer tools provided by parallel developments in immunology and molecular biology.

I do not wish to elaborate any further on breakthroughs in endocrinology, lest I am accused of being partial to my own speciality. However, I entirely agree with the observations of a most distinguished theoretical physicist, Erwin Schrodinger of Austria, who considered the science of genetics as *"easily the most interesting of our day"*. Since the discovery of double helix, there have been spectacular breakthroughs in genetics. On the fundamental plane, we are witnessing the development of the Human Genome Project which represents one of the most ambitious scientific endeavours ever embarked upon by the mankind It aims at acquiring complete knowledge of the organisation, structure, and function of the human genome · the master blueprint of each one of us. Originally planned to achieve the goal of identifying all of 70,000 or so human genes and mapping them in a massive DNA database by the year 2005, the pace of progress of the project is such that the sequencing may be achieved even sooner, perhaps by the year 2003. It is entirely a matter of philosophical, ethical and social debate whether mapping out the human genome will facilitate the understanding of the ultimate — what is the purpose of the human life? Several scientists, foremost amongst them is Richard Dawkins at the University of Oxford, are propounding the view that 'life has no higher purpose than to perpetuate the survival of DNA..., that DNA neither cares nor knows. DNA just is. And we dance to its music.' To some of us, however, there is divine music even within the melody of molecules, if the mind is spiritually attuned. These cultural conflicts are likely to sharpen over the years.

The Human Origin

While recent developments reflect a breakthrough in the nuclear DNA research there is an equally impressive and parallel track of advances in our understanding of mitochondrial DNA (mtDNA). First reported in early 1960s, rapid strides have been made with regard to the elucidation of the structure, organisation and mode of expression of mtDNA. The differences already observed in the gene organisation, genetic code and localisation of the mtDNA in contrast to nuclear genome, provide a strongly suggestive evidence that the mtDNA may be of a different evolutionary origin. Be as it may, studies in mtDNA take us back to the time when man, and more scientifically stated, a woman, in the present human form and function, possibly walked on this planet. The evidence tends to indicate that this was about 200,000 years ago, but certainly no later than 500,000 years

In addition to shedding light on the origin of human race, the research on mtDNA has wider anthropological and social implications mtDNA adheres to a maternal mode of inheritance in mammals. Such uni-parental inheritance confirms that all the human mtDNAs in the world must trace back to a single common ancestor, and that this ancestor was indeed a female since the inheritance is matrilineal. About 10 years ago, a group of geneticists under the leadership of late Allan C. Wilson of the University of California at Berkeley constructed a family tree that traced modern *Homo sapiens* to a woman who lived in Africa. However, five years later, another groups of scientists demonstrated a plethora of equally possible origins in Asia. Whether this female ancestor lived

in Africa or Asia is therefore a matter of some debate, although arguments in favour of Africa seem to have an edge. Irrespective of the final outcome of such debate, the scientific facts established to-date indicate that functionally, mitochondrial genome supplies the protein machinery necessary for the key energy mechanism, namely, oxidative phosphorylation.

Mitochondrial Medicine

What is the origin of mtDNA? It is of evolutionary interest that the gene content has been essentially conserved, notwithstanding the large size variations among the mtDNAs of different species Evidence for a unique genetic code of the mitochondrial genome is now available. Comparative studies suggest that the common chimpanzee is closely related to the human, and that the mtDNA divergence occurred about 5 million years ago. Mitochondria, no matter from what species, simply make ATP; and they all do it exactly the same way. Located in the inner membrane of the mitochondria are five multiple-subunit enzymes constituting the respiratory chain and serving as a relay system of electron transfer. The elucidation of the steps of the respiratory chain in the mitochondrial physiology by Peter Mitchell was as important a milestone in mitochondrial research as was the discovery of maternally inherited mtDNA. Peter Mitchell received the Nobel Prize in 1978. Earlier, Fritz Lipmann was the recipient of Nobel Prize in 1953 for his demonstration that ATP was the universal carrier of chemical energy; this was followed by the award of Nobel Prize in 1957 to Alexander Todd who synthesised ATP chemically. Hence ATP and oxidative phosphorylation have been a virtual gold mine of Nobel Prizes since the time I became a student of medicine.

It is therefore appropriate that this year's Nobel Prize for Chemistry, announced about two weeks back, is being shared by Prof. Paul D. Boyer of UCLA and Dr. John E. Walker of Cambridge, UK, for their pioneering work on ATP synthase, the enzyme which catalyses the formation of ATP. While the UCLA group elucidated the mechanism of ATP formation from ADP and inorganic phosphate, the Cambridge group established the structure of the enzyme and verified the mechanism proposed by the UCLA group. I mention this to indicate that science today is not just trans-atlantic but trans-disciplinary and a major advance in molecular biology and physiology has been recognised with a Nobel prize in Chemistry. This underscores the need of intellectual and academic reinforcement between the basic scientists and the clinical specialists, and equally importantly, between scientists working in different areas of life sciences. The artificial compartmentalisation based on disciplinary denominations is being demolished and the universality of science is being established

Rapidly advancing knowledge of mitochondrial physiology has provided a deeper insight and possible approach to the perpetual quest for prolonging youth and delaying ageing A decrease in the level of coenzyme Q in the mitochondria results in a decrease in oxidative phosphorylation, an increase in lipid peroxidation and an accumulation of highly reactive free radicles resulting in damage to cell membranes and increased rate of mutations in mtDNA. Such a sequence of events links biological process of ageing with degenerative diseases including those affecting heart, brain and blood vessels. It is a sobering thought that despite the phenomenal progress of science in the twentieth century, the *first* direct observation of a mitochondrial mutation associated with clinical symptoms was made only in 1988 Since then, mitochondrial medicine has developed as a distinct discipline claiming its rightful place in the next century.

Science and Spirituality : Synthesis or Antithesis

I visualise an emerging convergence of physical with metaphysical : spirituality with science. mtDNA which is the storehouse of energy and the ATP which is the energy currency in the cell, constitute what may be justifiable called the cell *Shakti* Is it therefore a blend of eastern mysticism and western science when we acknowledge *shakti*, with its feminine symbolism, as a part of matrilineal inheritance and propagator of the human race? Is there a deeper meaning to the worship of Durga, enshrined in the Vedic wisdom as the 'mother of the worlds' (*Jagadamba*) and sustainer of the worlds (*Jagaddhatri*), and also eulogized as the primordial energy (*adi-sakti*)? Was it mysticism of ancient sages or was it their intuitive foresight?

Some of the learned members of the Faculty and a large number of the recipients of degrees today may not be able to resolve the intrinsic contradiction between science and religion. It has become customary that any claim to modernism and scientific temper must necessarily be founded in a denial of religous faith. A scientist therefore, must defend his firm conviction regarding synthesis of scientific methods of enquiry and his religious faith and belief based on empiricism The western scientists

are equally divided. On one side of this sharp cleavage are those represented by the physicist and Nobel laureate Charles Townes, who in 1964 shared the Nobel Prize for the invention of the laser. At the age of 82, Townes continues to supervise postgraduate students in astronomy as University Professor Emeritus at Berkeley. He does not see science and faith as opposing forces, 'science wants to know the mechanism of the universe, religion the meaning. The two cannot be separated,' Townes recently observed. Holding a diametrically opposite view is a group of scientists led by Richard Dawkins, who goes so far as to say that anyone who believes in a creator God is 'scientifically illiterate'

Nevertheless, it would be most gratifying to those who share my views regarding religious faith to learn that the pendulum is swinging in favour of the co-existence of spirituality and science. It has been demonstrated most strikingly in 1997 poll by Edward Larsen of University of Georgia, the results of which were published in a recent issue of *Nature*, it was found that about 40 per cent of working physicists and biologists hold strong spiritual beliefs. More significantly, even if the space available for God may be progressively shrinking, its overall impact seems to be marginal, as the results of Larsen's poll are strikingly similar to those of a similar poll conducted in 1916! Lest strong currents of pseudo-intellectualism shake us in our own cherished beliefs, it would be worthwhile to remember that Werner Heisenberg developed the uncertainty theory by drawing heavily on the philosophical framework of Eastern mysticism.

Futurology of Medicine

The culture and philosophical issues that I have raised shall have a close bearing on the future developments in the science and art of medicine. Just as the understanding of mtDNA has enlightened the human race about its origin, the future advances in understanding of nuclear genome are likely to pave the future course of the humankind. In the early 1980s the technique of micro-injecting DNA into the pronuclei of a fertilised single cell mouse embryo was developed. This has paved the way for studying the effect of introducing novel genes into preselected tissues. Significantly, most human genes are appropriately expressed when introduced into mouse embryo in the manner described. A further logical extension is the technique to grow in culture embryonic stem (ES) cells which can be transfected. The ES cells in combination with a gene trap construct can be used for the creation of insertional mutation that is characterised by the presence of transgene These developments, if used judiciously, carry an enormous potential for the good of the humankind. Nevertheless, they also carry an inherent risk of wrong usage.

The spectacular advances such as evolution of genetic intelligence, genomic imprinting, transgenic livestock as bioreactors, and gene transfer techniques for use in genetic vaccination, are likely to open new vistas in the understanding and practice of medicine in the next century. At the same time, the present and emerging technologies bring medicine at the crossroads where physician's obligation to alleviate human suffering may come in direct conflict with the possible future extensions to areas of concern such as *eugenics*. First coined by Francis Galton, *eugenics* connotes selective breeding for the improvement of species. Although debated widely before and just after Second World War, it has now acquired a new dimension. With the rapid progress in the sequencing of human genome, socio-biological concerns are becoming real in context of biological determinism. Although such a scenario may seem somewhat remote, there are other unresolved issues in medical ethics which are of immediate concern. These include, amongst others, patenting of human DNA and human cloning.

The use of patents of the *methods* and *processes* employed for the isolation, expression or sequencing of human genes is understandable, and given the international climate, perhaps inescapable. But what about patenting of human DNA or gene sequences, or even fragments of a gene sequence? A recent study indicates that 652 patents applications have already been filed for human DNA sequences; about one-half of these patents are in the private sector, almost exclusively being shared by companies in the US (~50%), Japan (~21%) and Europe (~18%). It is a chilling thought that patents of all our genes would be held by private sector or public sector (mostly in the US) during the next decade. Therapeutic and diagnostic research in genomics will then be a matter of exclusive rights beyond our control. What a long way from 'designer jeans' to 'designer genes', both originating in the wild west! Thus, the national concerns need not be confined to 'bonded labour' but should start looking far beyond to 'bonded genes'.

Regarding human cloning, even international organisations belonging to the UN family have taken opposing views. While UNESCO Director General observed that 'human beings should not be cloned under any circumstances', a report by the WHO

working group on cloning argues that 'opposition to human cloning has prompted the legislators and other policy makers to act out of moral panic rather than from considered deliberation.' Political leadership has not lagged far behind. The French President, Jacques Chirac has given a forceful call for an international ban on the use of human cloning for reproduction. President Bill Clinton has gone a step further stating 'our deepest truths remain outside the realm of science'. Referring to the recent cloning of a sheep, he stated, 'we should resist the temptation to replicate ourselves'.

On a positive note, recombinant DNA technology has already yielded rich dividends. Twenty years ago, we were facing the challenge of short supplies of insulin possibly by the turn of the century, as the exclusive source of insulin at that time was bovine or porcine pancreas. Today, thanks to technologies of gene splicing and recombinant DNA, a large number of ultrapure, biologically active, genetically engineered products are available. These include not only hormones like insulin and growth hormone, but also other agents such as erythropoietin, interferon and tissue plasminogen activator (tPA), amongst others.

We have indeed come a long way since 1970s, when a fellow Indian by birth, Hargobind Khorana successfully synthesised a gene and was awarded the Nobel Prize. Recombinant DNA technology became available in 1980s. Today, gene therapy is already a reality. In 1990, the first clinical trials for gene therapy were initiated and as of now, more than 200 clinical trials are being conducted worldwide with hundreds of patients enrolled for these trials. There seems to be a consensus and general agreement on ethical grounds that only gene therapy using somatic cells be used in carefully designed trials and clearly defined ethical principles, and that any genetic manipulation of germ cells shall not be undertaken.

Epilogue

Medicine is now undergoing a paradigm shift from organ physiology and cell pathology to molecular biology and reverse genetics. The recipients of post-graduate and post-doctoral degrees today are indeed fortunate that they would be practicing medicine in the twenty-first century when contemporary fundamental research and resultant basic discoveries shall be transcribed into diagnostic tools and therapeutic modalities of everyday use.

The dawn of the age of aquarius for biosciences seems to be tantalizingly close. However, the concern and compassion of a physician, and his inherent capacity to develop an inner vision and in-depth perception, shall always go beyond the hitherto known frontiers of biosciences. Indeed, this is where the sublime art of medicine surpasses the narrow confines of the advancing horizons of the science of medicine. This is when a physician attains the divine gift of healing. Yet, how many strive for both? And how few achieve either!

Energy for Better Tomorrow

A three-day National Seminar on "Energy for Better Tomorrow: Renewable and Non-Renewable Energy Source" (EFBET-97) was recently organized at Kavikulguru Institute of Technology and Science, Ramtek. The objective of the seminar was to bring eminent people in the field of Energy on to a platform to discuss issues related to energy conversion and conservation with special emphasis on renewable energy sources and their applications.

The topics discussed at the seminar included (i) Present scenario and future prospects; (ii) Foreseeable change in energy need in coming decades; (iii) Energy Conversion and Conservation; (iv) Renewable Energy Systems; (v) Non-renewable Energy Systems; (vi) Integrated Energy System Planning, and (vii) Energy Audit.

Dr G. Thimma Reddy, Principal, K.I.T.S., Ramtek and Chairman EFBET-97 opined that energy being important should be conserved and audited apart from finding new sources for production. Mr. M. Ramesh Babu, Organizing Secretary, brought forth the theme of the seminar by saying "Energy is God Today" thus implying that we had to conserve energy as well as look for alternate sources of energy.

Dr. Y.V. Bhalla, General Manager (I), BHEL, Nagpur, who inaugurated the seminar, stressed the importance of Industry-Institute interaction to bring indigenous technology to the forefront. He also stressed the self-sufficiency and independence from government support and suggested that younger generation should take lead and face challenges.

Dr. S. Prasad, Professor & Head, Dept. of Mech. Engg., PCE&A, Nagpur emphasized that environmental aspects be borne in mind while we attempted to tackle the energy crisis. He also expected this "jolt" of environmental awareness to come from educational institutions and spread amongst society. Dr. D.P. Kothari, Principal, Visveswariah Regional College of Engineering, Nagpur, suggested that due concentration be focused on villages and energy needs of villages be fulfilled to arrest migration from villages to cities. He also suggested that proper use of renewable energy sources be implemented in villages to the utmost advantage.

Dr. B.B. Chopne, Vice-Chancellor of Nagpur University, opined that villages which were, the backbone of our country were not given due importance at the moment. He suggested that the use of non-conventional energy in villages at affordable prices could prove to be a major revolution to thwart the energy crisis.

Dr. B.S.K. Naidu, Director, Renewable Energy Project Support Office (REPSO), Winrock International, New Delhi, in his keynote address, stressed the fact that there was disproportionate energy mix of thermal and hydel sources. He opined that if hydel sources were given due importance and tapped, they would prove to be a good solution to the present energy crises with least environmental imbalance. Small-hydro sources offered least cyclecost and ran for long periods of time and thus stood to be a good source of energy, he added. He also highlighted the solar energy applications.

Under the theme "Energy Scenario" the focus was on the present energy scenario and the role of renewable resources to overcome the present energy crisis for a sustainable development. It was felt that as renewable energy technologies made use of resources available locally, they could be better adaptable for small scale production and could be designed for decentralized usage pattern. Importance of various techniques such as methanisation, palletization, gasification, pyrolysis which would help us in the disposal of garbage problem by simultaneously providing environmentally benign sources of energy were highlighted.

Use of several alternate fuels such as Esterified Diesel-Vegetable Oil blends, vegetable oils (non edible), methanol blended fuels, CNG and Hydrogen in particular were stressed upon. A simple experimental setup to produce 90 lts. of hydrogen in 3.5 hr. with the hydrogen generation efficiency of 18% by using 400 w solar photo voltaic panel was highlighted.

The main focus was on the usage of solar energy in rural India. Economically feasible designs and experimental setups such as solar assisted incubator, solar freonjet refrigeration and solar drier for agriculture products were dealt with. The latest technologies on (i) development of Evacuated Tubular Solar Collector incorporating heat pipe (ii) usage of solar energy for air conditioning purposes etc, were reviewed.

Several case studies on Energy

Audit at various industries such as acetone plant, sugar industries, blood bag manufacturing industry were presented. The growing importance of hybrid systems in various industries were considered as helping hand to solve the present energy crisis. Many energy conversion and conservation techniques in various industries such as distilleries, chemical & allied industries etc., were also given due importance.

Sri Kailash Chandra Vijh, Chairman-cum-Managing Director, Western Coalfields Limited, in his valedictory address, opined that today's engineers should search for cost-reduction methods in energy systems with special emphasis on energy conservation. He quoted the example of Japanese policy of saving power as a part of the power proposed to be produced at a later stage

After detailed deliberations, the following recommendations emerged:

- An Energy cell be established to disseminate information and share the experiences. This would be of immense use to remote villages suffering from power problem. This could be of use to researchers to exchange views and information.
- Each Engineering College may propose to "adopt" its adjoining village and nurture it for its energy needs.
- Seminars like EFBET-97 be held periodically (once in an year or two) with a specific theme to update and compile the developments.

Changing Trends in Library and Information Science

A national Seminar on Changing Trends in Library and Information Science was recently organised at the Cochin University of Science and Technology.

Dr. M.D. Baby, Deputy Librarian-in-charge, in her welcome address, pointed out that the library and information profession had been facing not only the challenge of coping with the emerging information technology but also the challenges of storage and maintenance of huge mass of information, the increasing cost of documents, especially journals, etc. Dr K. Babu Joseph, Vice Chancellor, Cochin University of Scinece & Technology, who inaugurated the seminar, referred to the adoption of a long term Dutch-aided project to completely automate the University Library system and establish a network. He urged the industries to make use of the new information resources that would be made available from the library Prof. (Dr) K.S. Raghavan, Professor and Head of the Department of Library and Information Science, Madras University, in his keynote address, referred to the advances in telecommunication and technology He pointed out that the library and information profession in the country did not take advantage of the data communication networks and did little to develop data base of resources available within the country. He also stressed that libraries would be increasingly regarded as facilitators of access to information rather than as a storehouse of information materials.

Over sixty five delegates from various parts of Kerala and other south Indian states attended the seminar at which 19 papers were presented during the two technical sessions.

After detailed discussions the following recommendations were made ·

1. The card form of catalogue be replaced by computerised catalogue.

2. Library science education in the country should be attuned to mould library professionals who can take up new challenges.

3 Information base be developed so that the gap between developed and developing countries can be reduced.

4. Immediate steps be taken to prompt the government to formulate a National Information policy to help uniform development of information technology in India.

5 Information systems should be planned and implemented with active involvement of the top management.

6. Acquisition of new media of information particularly publications on CD-ROM and access to online sources need to be encouraged in Libraries.

Instead of possessing every bit of information required for satisfying the requirement of all users in a library, the importance has shifted to providing increased access to the needed information. This kind of access is possible by developing an Intranet and linking the same to Internet.

8. Internet based information retrieval be introduced in libraries in order to make communication process more flexible.

9. Institutions should take immediate steps to develop union catalogues of the collections available in various departments so that all the resources available can be put to optimum use.

Libraries should acquire network connection to make use of the large amount of unused information available on Internet.

Librarians should develop mediacy skills to educate the user to retrieve the relevant documents.

10. University Libraries should organise frequent refresher courses with practical training in information handling for library professionals.

World Congress of Changeology

The Society for Integrated Development in Urban & Rural Areas, the Dalit Voluntary Associations Federation and the Indian Changeological Society, in collaboration with Dept. of Sociology, Kakatiya University propose to organise a World Congress of Changeology on 15-17 November 1998 at Hyderabad.

The objectives of the Congress are (i) to identify key needs of changes around the globe for higher eduction for the third millennium; (ii) to share the experiences of the past and to work towards an agenda as to how the universities invite Changeology; (iii) to foster changes for international understanding between the education and real issues of the world; (iv) to provide a platform for key developers providing practical and relevant solutions and support for the issues being faced by the third world countries; (v) to develop the spirit of humanity in the context of globalization; and (vi) to initiate the changeological movement for the global village.

The topics proposed to be discussed at the Congress include (1) Changeology for the third millennium, change in social thought and perspectives. Indicators & pillars of change in private and public sectors; (2) Gobalization, liberalization, dalitisation, humanism, human rights, eradication of hypocrisy, sycophants and pretenders; (3) Changes in religiousness, education, economy, culture, communication, films, press, institutions. Change in values, norms and customs and traditions; (4) Changeology Areas : Issues and Methods of Investigation, Reflections and Interactions with real world issues including of the present day political violence and criminalization; (5) Sustainable development and environmental issues : Sanitation, health, hygiene, non-conventional source of energy, social forestry; (6) Participatory development, civil society institutions, social and literary movements, non-governmental organisations; (7) Operationalisation and social development : Eradication of Poverty and beggary Employment generation. Rural Urban reconstruction; (8) Development of Weaker Sections : lower classes, middle classes and women; and (9) Changeoligical aspects represented in world literature and the role of intellectuals.

Further details may be obtained from Mr T.J.P.S Vardhan B-51/F1, Vijayanagar Colony, Hyderabad-500 057.

Centre for Research & Indl. Staff Performance

The Centre for Research and Industrial Staff Performance (CRISP) is an autonomous organisation under Indo-German Technical Cooperation project. It aims to provide high quality training and related services in advanced technology to its target groups. CRISP maintains close links with industry and other training providers in the concerned areas.

CRISP's target groups are : Degree/Diploma passed job seekers; Teachers and technicians from technical institutes; Personnel from industries. In addition to these target groups, CRISP shall provide services to the staff and students of Production Engineering wing of S.V. Govt. Polytechnic, Bhopal.

The services provided to these groups according to demands/needs are : Short courses; Production training; Learning materials; Consultancy; Information Resource services in print, audio visual and electronic media.

The courses being conducted by CRISP include : Hydraulic & Electro Hydraulic control; Pneumatic & Electro Pneumatic control; CNC machines (turning and milling); CAD/CAM (I-DEAS and EMCODRAFT); Robotics; Programmable logic controllers; Maintenance of machine tools; Maintenance of electronics equipment, Information technology; Technical skills enrichment; Developing positive attitude; Designing training programmes; Library management; Logical structures.

Further details may be obtained from the General Manager, Centre for Research and Industrial Staff Performance, Campus of S.V. Govt. Polytechnic, Bhopal-462 002.

IUCAA Associateship Programme

The Inter-University Centre for Astronomy and Astrophysics (IUCAA) offers Associateship Programme under which a faculty member of a university or a postgraduate department in a college can visit IUCAA for periods of short and long durations over a span of three years to develop his/her interest and expertise in astronomy and astrophysics through (i) the use of IUCAA's in-house facilities like the specialized library, the advanced computing

systems, etc towards research projects already undertaken; (ii) discussion with IUCAA's core academic staff, post-doctoral fellows and visiting experts for teaching and research assignments as well as joint projects; (iii) participation in observational programmes in national and international astronomical facilities, and data reduction; (iv) carrying out R&D activities in astronomical instrumentation; and (v) joint research projects with members of other universities/postgraduate colleges.

IUCAA invites applications, on plain paper, for the ninth batch of associates for the tenure starting from July 1, 1998 to June 30, 2001. The applicants should forward their application through the heads of their departments/institutions, along with their biodata, list of publications and a brief write-up on the work they intend to carry out as Associates of IUCAA. The last date for receipt of applications in April 30, 1998.

Further details may be obtained from the IUCAA, Post-Bag No. 4, Ganeshkhind, Pune-411 007.

Tezpur Varsity Foundation Day

Tezpur University recently celebrated its Fifth Foundation Day. Speaking at the occasion Dr. H.N. Borthakur, noted educationist, called upon the faculties of the University to develop a rapport between the University and the people. The University, he said, must tell us the areas in which the society should invest the scarce resources of the country.

Dr. M.C. Bora, Rector, Swadeshi Academy, appealed to the teachers of the University to do research on such areas which were directly useful to the society. He said a country like ours could afford the luxury of research on areas which did not have a bearing on the development of the society.

Inaugurating the newly established postgraduate department of Physics, Prof. (Dr.) Raja Ramanna, an eminent scientist, and MP, stressed the study of the basic sciences and complimented the Tezpur University for having come out with a bright prospect and new ideas for offering the Master's Programme in Physics. He said the concept of Physics had undergone substantial changes over the years and it was now imperative to stress inter-disciplinary studies. In all disciplines, an inter-disciplinary approach could only bring about the desired goal of education in science and technology, he added.

Speaking at the Open Session Dr. Raja Ramanna gave an analytical account on the role of universities in nation building. He said there was a philosophy behind the establishment of a university. The university system of education in India was introduced during the British rule and since then it had developed with basic changes in its outlook and mode of teaching-learning. Dr. Ramanna recalled the great scholars, educationists, scientists, like C.V. Raman, Sir Asutosh Mukherjee, S N. Bose, Meghnad Saha and Dr. Radha Krishnan who had contributed immensely towards development of the nation.

He dwelt on the development of science and technology that had taken place in India in its post-independence period and said that the universities must be able to produce trained manpower for application of the technology available in the country. There was no doubt that the universities instead of awarding certain degrees must produce the right type of men giving them necessary education and training to undertake different occupations utilising the available resources in each region of the country. Referring to the examination and evaluation system of the Indian universities, he called upon the educationists to make a review of the system so as to ensure a method by which the students of the brightest career and brightest ideas could be identified through our evaluation system.

Dr. D.N. Buragohain, Director, IIT, Guwahati released the Souvenir brought out on the occasion. In his address he lamented that in spite of India having large technical manpower, the country was looking for collaboration in developing its industries. He said that the technical manpower in India must build up their confidence in setting up and developing industries using the developed technologies indigenously. Dr. Buragohain complimented the university for starting the departments with emphasis on Applied Science and Research.

Shri Thaneswar Boro, Assam Higher Education Minister, who presided, called upon the University teachers to evolve relevant technologies for harnessing the resources available in Assam for rapid economic development of the State. The universities had a positive role to play in bringing the socio-economic development of the region, he added and hoped Tezpur University would be able to come out with bright ideas in delivering goods to the society.

Brain Storming Session on Quantification

A two-day session on Brain Storming on Quantification of

R&D in Science and Technology, sponsored by Department of Science and Technology, was recently held under the auspices of the department of Environmental Science of the Gauhati University. Inaugurating the session, Prof. J. Medhi, Emeritus Professor, Gauhati University, lamented that only 0.83 per cent of Gross National Product of India was spent for R&D activities, whereas the countries like Pakistan spent one per cent of it. He called for measures to adequately cover the academic sector by the surveys conducted for collecting data on financial and manpower resources deployed for R&D activities

The academic sector in the country was one of the major performances of research, he said. It comprised around 30,000 science and technology faculty in 226 Universities and other national level institutions of higher education, beside those in a large number of postgraduate science colleges, medical colleges and engineering colleges.

Prof. H.L. Duorah, Vice-Chancellor, Gauhati University, presided while the keynote address was delivered by Dr. A.N.N. Murtty, Joint Adviser and Head of the NSTMIS of the DST. Mr. Murtty said that DST was in a position to quantify the resources devoted to R&D from all other sectors except academic sector Prof. Duorah said that research should form an integral part of the academic life in the University.

Ocean Science Cell at Mangalore Varsity

Ocean science and technology cell (OSTC) in the area of marine geology and geophysics is proposed to be set up a Mangalore University by the Union department of ocean development (DoD) A memorandum of understanding was signed recently by the university with DoD in this regard.

News from Agricultural Universities

ICAR Grant for Banana Research Centre

The Indian Council of Agricultural Research (ICAR) is reported to have selected the National Research Centre for Banana at Podavur, near Tiruchi, under the National Network for Drip Irrigation System in Perennial Horticultural Crops, and sanctioned a sum of Rs. 8.13 lakhs, for the same. This was revealed by Dr. P. Sundararaju, Director of the centre in Tiruchi recently. He said that though the potential advantage drip irrigation held for horticultural crops has been understood, the package of practices and methodology to be adopted for different irrigation sources had to be studied further.

Drip irrigation is the most efficient form of irrigation, since water can be applied directly to the root portion. About 50 per cent of the quantity of water for irrigation could be saved by adopting the system. Drip irrigation was ideally suited for wide-spaced high-value horticultural crops owing to its high water efficiency, enhanced crop yield, less incidence of pest attack and overall improvement in crop management.

Maharashtra and Gujarat had made a breakthrough in productivity and production in banana cultivation, thanks to widespread adoption of drip irrigation, and fertilizer application through drip irrigation, known as fertigation. The fertilizer needed for the crop is mixed with water and supplied to the plants through drip irrigation. This helps the plant to get the optimum dosage of nutrients, at different levels of growth of the plant. Fertilizer quantity needed is also brought down by fertigation.

Dr. Sundararaju said that per hectare production in Maharashtra was 56 tonnes compared to only about 28 tonnes in Tamil Nadu, and one of the main reasons for the high productivity was drip irrigation and fertigation adopted by the farmers in the State.

He pointed out that total quantity of banana produced in Maharashtra was much more than the production in Tamil Nadu, even though the area under banana cultivation in Maharashtra was only about 52000 hectares, compared to about 90,000 hectares in Tamil Nadu.

Under the ICAR sponsored National Network for Drip Irrigation System for Banana, research would be conducted on the right type of Drip irrigation, fertigation method, and optimum use of fertilizer for different cultivars would be studied, he added.

Dr. Sundararaju said that under the special programme of dissemination of latest techniques and technologies for banana cultivation, a special training programme for the assistant agricultural officers, assistant directors, and deputy directors in the agriculture Department in Tiruchi on different aspects of banana cultivation was organised recently and 40 officers attended. Similar training programmes would be organised for the second batch of officials shortly, he added.

News from UGC

Countrywide Classroom Programme

Between 1st and 7th March, 1998 the following schedule of telecast on higher education through INSAT-1D under the auspices of the University Grants Commission will be observed. The programmes are telecast on the Doordarshan's National Network from 7.15 to 8.00 a.m. every day except on Saturdays & Sundays. These programmes are also telecast on Doordarshan's National Network from 6.00 to 7.00 a.m. four days a week i.e. on Tuesdays, Thursdays, Saturdays and Sundays. On DD2 University Video Lecture Courses will be shown at midnight between 0000-0030 hrs. and in the morning between 10-10 30 a.m. on Monday through Friday.

Hindi Programmes are being telecast on Mondays, Wednesdays & Fridays from 6.00 to 6 30 a.m.

1.3.98

"Bhavai · The Folk Drama of Gujarat"

"Puppetry Video Workshop-'Cool it'

"South Indian Bronze Icon"

UVLC

No Telecast

2.3.98

"Laser Cooling"

"Aluminium-1 : The Wonder Metal"

"Time Management"

"Visual Impairment : Limitation of Blindness"

"Nuclear Issue : The Indian Stand"

UVLC

"History of Indian philosophy"

"Types of Chemical Messengers & Life History of Hormones"

3.2.98

"Material Testing-2"

"Pages from History : The Egyptian Mummy"

"Perspective on Animal Experimentation"

"Ramparts of Heaven — The Himalayas"

"The Aluminium-2 . The Wonder Metal"

"Boat Building — A Tradition Marginalized"

"Kelkar Museum : One Man's Passion for the Past"

"How do Bats Catch Frogs"

UVLC

"Functionalism"

"Elementary Integration and Applications-XII"

4.3.98

"Arsenic Contamination-1 : Problems & Properties"

"The Aluminium-3"

"Studies on 1995 Total Solar Eclipse"

"Learning"

"Climate Simulation : Prediction of Global Change"

UVLC

"Application of Principles of Design in House Interior"

"Ocean Deposits-1"

5.3.98

"Algorithms"

"Integral Pedagogy Process-5"

"Romanticism Revisited — The Age of Revolution"

"Question Time-56"

"The Aluminium-4"

"Fun with Commerce"

"Secularism"

"Biodiversity for Environmental Restoration"

UVLC

"The Indian Republic Goals & Principles"

"Who Bears the Burden of Tax?"

6.3.98

"Safira Shahnaz — A Commitment to Chess"

"Iron Ore : Occurrence & Mining"

"Round Table-6"

"Jazz-3 : Swing"

UVLC

"Language & Communication"

"Special Audits"

7.3.98

"We too are Working -- Child Workers of India"

"Caring for the Mind — Upper Most in Our Mind . Recent Trends in Psychological Disorders — Schizopherenia"

"Fem House"

UVLC

No Telecast

Hindi Telecast

प्रात: 6.00 से 6.30 बजे तक

2.3.98

"आपका स्वास्थ्य, आपके हाथ-2"

4.3.98

"निष्क्रिय स्थापत्य भवन-1 सिद्धांत"

6.3.98

"हम नागरिक विज्ञान लोक के"

"प्रगति के बादल : ग्रामीण विकास के नए पहलू"

News from Abroad

Summer Programme in American Law

The Faculties of Law of Leiden University, the University of Amsterdam and Columbia University in the City of New York propose

to organise the 36th Summer Program in American Law at the Leiden Law School, from July 5 through July 31, 1998. This Summer Course, which was started in 1963, is designed to provide a general introduction to the American legal system.

Instruction will be offered in the subjects of (1) Statutes; (2) The U.S. Litigation System: Institutions & Procedure; and (3) Constitutional Law.

In addition Elective courses would include Labour Law; Contracts, Intellectual Property; Legal Research-Beginning to Advanced Instruction in Finding U.S. Law; and Computer Networks: Legal Issues of the Present & Future.

Eligible to the Program are law gradautes, who are proficient in English. Advanced law students may be admitted in exceptional cases. The costs for the Program (covering tuition fee, study materials, hot luncheons, housing and administrative expenses including extracurricular activities and farewell dinner) will be 3825,-Dutch guilders (students Hfl. 2325,-). A limited number of scholarships, covering all or part of the expenses, are available.

The last date for receipt of applications is April 30, 1998. Further details may be obtained from Leiden University, Faculty of Law, (Atten. Mrs. B. Zaaijer), Columbia Summer Program, Hugo de Grootstraat 27, 2311 XK Leiden, the Netherlands; fax . +31.71.527 76 00 e-mail: jfsacsc@law.leidenuniv.nl http://emoglen.law.columbia.edu /clasp.

Conferences/Symposia/ Workshops

April 26-30, 1998. International Teacher Education Conference (ITEC). East China Normal University, Shanghai, P.R. China. *Theme:* "Teacher Education in the Asian Region: Policy and Practice." *Inquiries:* The Secretariat, ITEC 1998; c/o Faculty of Education; The University of Hong Kong; Pokfulam Road; tel: 2859-2871; fax: 2517-2100; E-MAIL: ITEC98@HKUCC.HKU.HK.

July 26-August 1, 1998. International Multicultural Conference, Edmonton, Alberta, Canada. *Themes.* Gender, ethnicity; family; diversity; human rights; ethics; politics; equality; labour; religion; language; education; technology; cross-cultural elements; community; economics; media; legal. *Inquiries:* Dr. Annette Richardson, 7-104 Education North, Department of Educational Policy Studies, University of Alberta, Edmonton, Alberta, T6G-2E1; Fax: 403-471-179, E-mail · ANNETTE.RICHARDSON@UALBERTA.CA; Website: HTTP://WWW.UALBERTA.CA/~AER/KANATA/1998.CONF HTML.

July 27-August 1, 1998. 14th World Congress of Sociology, Montreal, Canada. Organized by the Sociology of Education Research Committee (RC04). *Themes:* Race, Ethnicity and Education. Assessing the Impact of Research; Transition from the School to Work; Education, Stratification and Mobility; The Future of the (Inclusive) University, Lessons from Experiments; Knowledge, Power, Culture and Education in South Asia; Evaluating the Development of Universities; Political Sociology of Youth and Adult Education under Neoconservative Policies; Education and Active Citizenship; Sociology of Education: Emerging Perspectives; Public, Religious and Private Schools: Education between State and Market, Study Careers in Higher Education: A New Combination of Rational Choice and Integration Theories; Globalisation and Educational Processes; Marketization, Privatization and Education. *Inquiries:* Jaap Dronkers, SCO-Kohnstamm Institute, University of Amsterdam, Wibautstraat 4, 1091 GM Amsterdam. The Netherlands. Fax: +31-20-5251300; E-mail:JAAPD@SCO. EDUC.UVA.NL

September 28-October 2, 1998. UNESCO World Conference on Higher Education. Paris, France. *Theme.* "Higher Education in the 21st Century." *Inquiries·* Ms. Mary Louise Kearney, Chief, Unit of the World Conference on Higher Education, UNESCO, 7 place de Fontenoy, 75352 Paris 07SP France; fax: 331 4568 5626; e-mail : MLKEARNEY@UNESCO.ORG.

SAHA INSTITUTE OF NUCLEAR PHYSICS

Sector-1, Block-AF, Bidhannagar,
Calcutta-700 064

NO. SINP/R/ADVT/RF/2/98

JUNIOR RESEARCH FELLOWSHIP IN PHYSICS AND BIOPHYSICAL SCIENCES (1998-1999 SESSION)

Applications are invited for Junior Research Fellowship at the Saha Institute of Nuclear Physics. The Institute is engaged in research in many front-line areas of Physics and Biophysical Sciences such as : **Physics** : Accelerator-based Nuclear Physics, Theoretical Nuclear and Astro-nuclear Physics, High Energy Physics, Mathematical Physics, Solid State Physics, Low Temperature Physics, Surface Physics, Physics of Soft Condensed Matter, Plasma Physics and Magnetic Confinement, Atomic and Molecular Spectroscopy etc; **Biophysical Sciences** : Structural Biology and Biomolecular Spectroscopy, Macromolecular Crystallography, Cell Biology and Ultrastructural Research, Molecular Genetics, Membrane Biophysics, Genetic Toxicology, Radiation Chemistry and Biology etc. **Eligibility :**

(a) Physics : Master's degree in Physics. Candidates with Master's degree in Applied Mathematics/Engineering Sciences or M.Tech. with good background in Physics may also apply.

(b) Biophysical Sciences : (i) Master's degree in Biophysics/Molecular Biology/ Biotechnology/Crystallography/Bio-chemistry/Chemistry (all with Mathematics and Physics at the B.Sc. level) (ii) Master's degree in Physics.

Candidates currently appearing in their final M.Sc./M. Tech. examinations may also apply.

Admission Test : Admission will be on the basis of academic records and performance in the admission test consisting of a written examination and of an interview which will be held in the month of **May, 1998.** The session is to commence in **August, 1998.**

Travelling allowance : Candidates called for the admission test will be reimbursed return second class Railway fare from their normal place of residence and will be paid DA as per the rules of the Institute.

The First year of the Fellowship : Selected students have to successfully complete a one year course, the Post M.Sc. Associateship Course, prior to pursuing doctoral research at the Institute.

Fellowship and Hostel Accommodation : The fellowship is **Rs. 2700/- p.m.** (expected to be revised soon). Limited hostel accommodation will be available.

How to apply : Application forms will be available from the **Establishment Officer, Saha Institute of Nuclear Physics, Sector-I, Block-AF, Bidhannagar, Calcutta-700 064, Email : pmsc@hp1.saha.ernet.in.** To obtain application forms please send a self addressed envelope (25 cms x 11 cms) by **15th March, 1998.** Do not affix any stamp on the envelope. Mention the stream (Physics/Biophysical Sciences) in which you want to apply. Completed application forms must reach the **Establishment Officer, SINP by 31st March, 1998.**

Debashis Basu
Professor-in-Charge, Registrar's Office

BOOK REVIEW

Understanding Computers

Vinod Kumar*

D. Ghosh Dastidar, S. Chattopadhyay and U.K. Sarkar. Computers and Computation — A Beginner's Guide. New Delhi, Prentice Hall of India, 1997. Pp. x+214. Rs. 79.00.

An attempt has been made in this book to present fundamental concepts and the development account of computers. The subject matter has been developed gradually which helps the readers to get clear idea of the model of computation The book has been divided into two parts. Part I contains an introduction which helps in creating interest in the minds of the users by exploring the tremendous influence that computers have exercised on various aspects of man's life. An attempt has also been made to make the users acquainted with the hardware and software components of the computers. Logical requirements for such components have also been highlighted in this part. Part-I has been divided into five chapters. The subject matter described in the first chapter has been divided into four major headings, namely, emergence of the computing giant, computer and its ever increasing influence, capabilities and limitations of the computers and the future service. The matter illustrated under each major heading has been subdivided into appropriate subheadings. Chapter two concentrates on the anatomy of the computers by giving details about I/O devices, memory technologies, processing hardware, data representation and interaction among various building blocks of computer. Though, the authors have done commendable work in putting the things well in order, yet there have been some lapses at the inclusion level of modern I/O devices such as digitizers, scanners and stylus pens. One of the important aspects of computer science is a working model of computation which has been given due weightage in the third chapter. This is one of the most important features of this book which could not find adequate place in other books on the same subject

Computer languages are natural outcome of computer science theories and related discussions. This aspect has been given due consideration in Chapter-4, which starts with language specification and concludes with system software by discussing most of the required basic concepts in depth in a systematic and concise manner. To help the readers in understanding and formulating a logical approach towards algorithm development, to master the inherent tricks of art of algorithm development, Chapter-5 explains the concept in a very systematic manner through a variety of intellectually appealing examples.

After one has understood the structure of, and the interaction among, various building blocks of computer, their usability in solving a wide range of problems faced by persons in their day-to-day lives can be better followed by using them through some easily understandable language in which these problems could be converted. A programming language has its own set of words. The authors have very correctly selected the BASIC language for this purpose.

Part-II deals with the fundamental concepts of BASIC programming language through carefully selected examples and exercises. The authors have tried to maintain the correspondence between the machine model and the language constructs through simple logic and explanatory examples. Chapters 6-9 have been devoted to the basic constructs of BASIC. The principles of generating different graphic objects are illustrated in chapter 10. Starting from the generation of pixels, the authors have touched upon the burning topic of computer animation which enhances the utility of the books for a novice.

The subject matter has been presented in a very concise but easily understood format. The simplicity of the language from the beginning to the end, helps build up a strong foundation of understanding. The book is free from printing mistakes and also no subject matter related error has been encountered. This book shall prove as an introductory textbook in computing and a self-explanatory guide to those entering the field of computing. The authors have been very successful in their efforts and deserve appreciation.

*Dean, Faculty of Technology, Gurukula Kangri Vishwavidyalaya, Hardwar-249 404.

SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY, NANDED

स्वामी रामानंद तीर्थ मराठवाडा विद्यापीठ, नांदेड

"DNAYANTEERTH", GAUTAMI NAGAR,
VISHNUPURI, NANDED-431 602

Applications are invited for the following **teaching posts** in the **Campus Schools :**

PROFESSORS **(2 Posts)**
School of Physical Sciences — 1
School of Life Sciences — 1
Readers **(5 Posts)**
School of Social Sciences — 1 (ST)
School of Life Sciences — 1 (SC)
School of Chemical Sciences — 2 (1-Open, 1-NT)
School of Earth Sciences — 1 (VJ)
LECTURERS - (a) **(5 Posts)**
School of Life Sciences — 2 (1-Open, 1-ST)
School of Chemical Sciences — 1 (Open)
School of Physical Sciences — 1 (VJ)
School of Earth Sciences — 1 (ST)
(b) - **(2 Posts)**
School of Commerce & Management — 1
Sciences (M.B.A.)
School Mathematics, Statistics & — 1
Cumputational Sciences (Computer Science)

NOTE : (1) The posts shown under (b) above are on temporary/contract basis.

(2) Reserved posts shown above are being advertised for the FOURTH time.

01. Above posts carry U G.C. recommended pay scales.

02. Candidates desirous of applying for more than one post should submit separate applications.

03. Candidates belonging to reserved categories must produce Caste Certificate issued by the competent authority of the State Govt and validated by the concerned authorities.

04. In case suitable candidates of specified reserved category are not available, the posts will be filled by appointing other suitable candidates on temporary basis not exceeding a period of one academic year.

05. For reserved posts candidates belonging to backward Classes as notified by the Govt. of Maharashtra will alone be considered.

06. Preference will be given to women candidates to the extent of 30% in each category.

07. Conditions may be relaxed in case of highly qualified and competent candidates.

08. Prescribed application form (a set of ten copies) can be had from the University Office in person on cash payment of **Rs. 200/-** or by post on submission of a crossed D D. for **Rs. 200/-** drawn in favour of **Registrar, Swami Ramanand Teerth Marathwada University, Nanded,** together with a self-addressed cloth bound envelope (**25 cm x 18 cm**) bearing postage stamps worth **Rs. 25/-.** Application forms will be sent under certificate of posting Blank application forms will be available for **sale from 2nd March to 10th March to 30th April '98.**

09. Application forms complete in all respects will be received in the office on all the working days either by hand or by post from **10th March to 30th April '98.**

10. Details regarding qualifications, specializations, are given in the Booklet supplied alongwith the application form set

11. No application shall be entertained if it is incomplete/received after the last date / not forwarded through proper channel

12. The interview of candidates found eligible will be preceded by Exposition/Colloquium.

13. The University will not be responsible for any postal lapses or delay.

14. The Selection Committee reserves the right to select highly qualified candidates, in absentia, for Professor's posts.

15. Candidates will have to attend interview at their own cost.

16. The University shall not be held responsible for postponement or cancellation of Scheduled interviews for any unforeseen/unavoidable reasons.

"Dnyanteerth" Gautami Nagar
Vishnupuri, Nanded-431 602

Advt. No : TP-1/98 **Dr. T.R. Sontakke**
Date : 23rd February 98. **REGISTRAR**

THESES OF THE MONTH

A list of doctoral theses accepted by Indian Universities

SOCIAL SCIENCES

Library & Information Science

1 Chandrappa, S **Indian management literature: Analysis and evaluation.** (Dr P Sadasiva Murthy), Department of Library and Information Science, Bangalore University, Bangalore

2 Mandal, Satyananda **Information system design for psychiatric social work in Calcutta.** (Dr Y P Dubey and Dr S M Tripathi), Department of Library and Information Science, Jiwaji University, Gwalior

Journalism

1 Thakur, Brij Mohan Singh **Study of effectiveness of mass communication media in population education programme in relation to sex domicile socio-economic status.** (Dr R K Jain), Department of Journalism and Mass Communication, Kota Open University, Kota

Psychology

1 Mehta, Renuka K **A study on sex role orientation in relation to martial adjustment and stress among married couples.** (Dr G R Joshi), Department of Psychology, Saurashtra University, Rajkot

2 Sridevi, K **Meditation, cognitive style and personality.** (Prof P V Krishna Rao), Department of Psychology, Andhra University, Waltair

Sociology

1 Chandra Murthy, M Sreerama **An analytical study of the social impact of I R D P Programme in R R District, A P.** (Prof E V Rathnaiah), Department of Sociology, Osmania University, Hyderabad

2 Ingole, Jyoti D **Shaskiya, vaidhkiya, mahavidyalaye Nagpur yethil vastigrahat rahana ya muliche samajik va sanskritik adhyayan.** (Dr M R Deshmukh), Department of Sociology, Nagpur University, Nagpur

3 Rajyalakshmi, V **Language as symbol of ethnic identity: A study of Mulky Movement in the Telangana districts of Andhra Pradesh.** (Prof Yogendra Singh), Centre for Study of Social of Systems, Jawaharlal Nehru University, New Delhi

4 Rathod, Bachubhai Arajanbhai **Yuvanoni navarashni pravrutino: Ek samajshastriya abhyas.** (Dr R M Bhatty), Department of Sociology, Bhavnagar University, Bhavnagar

5 Rawat, Meenakshi **Structural dimension of women's status in the rural system of Garhwal.** (Dr S S Bhatt), Department of Sociology, Hemwati Nandan Bahuguna Garhwal University, Srinagar

6 Thomas Kutty, B I **Stress and coping patterns of families caring for the mentally ill with special reference to the city of Indore, Madhya Pradesh.** (Dr S Pothan), Department of Sociology, Devi Ahilya Vishwavidyalaya, Indore

7 Tyagi, Muni Dev Singh **Industrialization and social change: A sociological study of tribals of Rajasthan.** (Dr Raka Sharan), Department of Humanities and Social Sciences, Indian Institute of Technology, New Delhi

Anthropology

1 Sharma, Probhat **Socio-cultural life of the Tai Khamjang of Assam: A case study.** (Prof R K Kar), Department of Anthropology, Dibrugarh University, Dibrugarh

Political Science

1 Darshan Singh **Garhwal ka grameen vikas evam prashasan: Simant Janpad Chamoli ka ek adhyayan.** (Dr R N Gairola), Department of Political Science, Hemwati Nandan Bahuguna Garhwal University, Srinagar

2 Etape, Devidas A **Yashvant Rao Chauhan yanche netritva; Ek rajkiya chikitsa.** (Dr B L Bholey), Department of Political Science, Nagpur University, Nagpur

3 Farida Begum **The Janata Party rule in Assam.** (Prof K M Deka), Department of Political Science, Dibrugarh University, Dibrugarh

4 Kumar, Alka **Indo-Pakistani co-operation in United Nations, 1947 to present day.** (Dr Ajay Saxena), Department of Political Science, Hemwati Nandan Bahuguna Garhwal University, Srinagar.

5 Naidu, Aarti **Swatantrayottar Bharat mein adivasi kshetron mein anusoochit jati evam janjatiyon ka samajik evam rajnitik vyavhar: Jhabua Jile ke vishesh sandarbh mein.** (Dr S S Bagga), Department of Political Science, Devi Ahilya Vishwavidyalaya, Indore

6 Pradhan, Bijoy Kumar **A study of electoral politics and voting behaviour: A study of change in pre and post poll situation in Khariar Assembly Constituency.** (Prof A P Padhi), Department of Political Science, Sambalpur University, Jyoti Vihar, Burla

7 Sanal Kumar, P K **Political parties in the Philippines: A study in the process of democratization, 1946-57.** (Dr Bhagwan Dass Arora), Centre for South, Central, South East Asian and South West Pacific Studies, Jawaharlal Nehru University, New Delhi

8 Sharma, Satyanarayan **Hindustani Lal Sena.** (Dr P L Joshi), Department of Political Science, Nagpur University, Nagpur

Economics

1 Bhattacharjee, Sanchita **Regional rural banks and rural development in Assam: A case study.** (Dr N K Dey), Department of Economics, Dibrugarh University, Dibrugarh

2 Birari, Kashinath Shrawan **Resource use structure, resource productivities and allocation efficiency of farms of Western Maharashtra.** (Dr Jagannathrao R Pawar), Department of Agricultural Economics, Mahatma Phule Krishi Vidyapeeth, Rahuri, Dist Ahmednagar

3 Bohra, Kalpna **Alleviation of rural poverty through I R D P in Rajasthan with special reference to Jaipur and Kota Regions.** (Dr H C Saxena), Department of Economics, Kota Open University, Kota

4 Borah, Ranjit **Role of tribal development programme in improving the socio-economic condition of the plain tribes of Assam; A study in Jorhat and Sibsagar districts.** (Dr T N Saikia and Prof K C Borah), Department of Economics, Dibrugarh University, Dibrugarh

5 Hoda, Sharful **Capacity utilization in selected basic industries of India.** (Prof Mohd Yusuf), Department of Economics, Aligarh Muslim University, Aligarh

6 Marthi, Radha **Impact of financing by co-operative agricultural development banks in A P on onfarm development: A case study of Sreeramsagar Project.** (Dr K Chakradhar Rao), Department of Economics, Osmania University, Hyderabad

7 Saikia, Nilakshi **Production and marketing of milk in Nagaon District.** (Dr D R Kalita and Prof K C Borah), Department of Economics, Dibrugarh University, Dibrugarh

8 Shrivas, Sushma **Visthapit parivaron kee samajik arthik sthiti: Ek vishleshanatmak adhyayan: Madhya Pradesh ke Hasdev Bango bahuuddeshiya pariyojana ke vishesh sandarbh mein.** (Dr Manju Chaudhary), Department of Economics, Guru Ghasidas University, Bilaspur

Law

1 Badar Ahmad **Freedom of Press and the Supreme Court: An appraisal.** Department of Law, Aligarh Muslim University, Aligarh

2 Joshi, Narayan Kashao **The office of the Speaker in the Constitution of India: A critical and comparative estimate.** (Dr Laxminath), Department of Law, Nagpur University, Nagpur

3 Ramaswamy P **Office of the Governor in India: Its efficacy and utility.** (Dr Abdul Rayees Khan), Department of Law, Osmania University, Hyderabad

4 Vijaywargiya, Mukulita **Judicial independence in India: A critical and comparative study.** (Dr G C Kasliwal), Department of Law, Devi Ahilya Vishwavidyalaya, Indore

5 Vyas, P C **Some legislative and judicial attempts to ensure justice for women in India: An analytical study with special reference to labour laws, personal laws and criminal laws.** (Dr B L Sharma), Department of Law, Saurashtra University, Rajkot

Military Studies

1 Singh, R P **Impact of Kashmir problem on India's security.** (Prof L J Singh), Department of Defence Studies, Hemwati Nandan Bahuguna Garhwal University, Srinagar.

Education

1 Atholli, Veerappa Dareppa **Forecasting needs and resource potentials for inservice education of secondary school teachers in**

Karnataka towards 2005 A D. (Dr P K Sahu), Department of Education, Devi Ahilya Vishwavidyalaya, Indore

2 Bargota, Parveen Kaur **Information processing of learning disabled and normal children.** (Dr Kusum Sharma), Department of Education, Jamia Millia Islamia, New Delhi

3 Mishra, M L **Manosamajik karkon ke sandarbh mein Garhwal Mandal kee madhyamik star kee shikshikayon ke samayojan kee samasya ka adhyayan.** (Dr R C Nautiyal), Department of Education, Hemwati Nandan Bahuguna Garhwal University, Srinagar

4 Molia, M S **A study of an effect of cognitive thought process, meta-cognitive process and counter suggestion process on achievement in Mathematics.** (Dr N S Donga), Department of Education, Saurashtra University, Rajkot

5 Najma Unnisa. **A study of physical facilities in the secondary schools of Andhra Pradesh in its relation to the achievement of students.** (Dr Fareeda Khatoon), Department of Education, Osmania University, Hyderabad

6 Pathak, Usha **Study of parental-perception regarding the impact of television programmes on primary school children.** (Dr R K Srivastava), Department of Education, Hemwati Nandan Bahuguna Garhwal University, Srinagar

7 Patil, Sangngouda S **Management of different forms of distance education at higher education stage in Karnataka and its futures towards 2005 A D.** (Dr P K Sahu), Department of Education, Devi Ahilya Vishwavidyalaya, Indore

8 Sughra Arshad **Creativity and cognitive styles of under and over achievers in specific school subjects at high school level.** (Dr Najmul Haq), Department of Education, Aligarh Muslim University, Aligarh

9 Taj, Naznin **Role of mass media in educating high school students on health.** (Dr Jayashree Ramakrishna), Department of Education, National Institute of Mental Health and Neuro Sciences, Bangalore

10 Vaijayanthi, R **Curricular intervention for the growth of environmental awareness at the primary level.** (Prof M Sreeramamurthy), Department of Education, Osmania University, Hyderabad

11 Valsala, K E **Certain cognitive and affective corralates of process outcomes in Physics of university entrants.** (Dr Kamala S Pillai), Department of Education, University of Calicut, Calicut

Commerce

1 Bhatia, Jasvinder Singh **Madhya Pradesh ka vanopaj vyapar: Tendupati ke rajkiya vyavsaya ke vishesh sandarbh mein.** (Dr J K Tiwari), Department of Commerce, Devi Ahilya Vishwavidyalaya, Indore

2 Gairola, Shubha **Regional rural banks and rural development of Garhwal Region.** (Dr R C Dangwal), Department of Commerce, Hemwati Nandan Bahuguna Garhwal University, Srinagar

3 Johari, Sanjay **Madhya Pradesh mein rashtriyakrit Bus sewa kee karya pranali ka arthik adhyayan.** (Dr Jayantilal Bhandari), Department of Commerce, Devi Ahilya Vishwavidyalaya, Indore

4 Khan, Mohd Asif **Entrepreneurial development in leather goods industry of UP since 1981.** (Prof A Farooq Khan), Department of Commerce, Aligarh Muslim University, Aligarh

5 Lakhotia, Rekha. **Madhya pradesh se niryat sambhavnayen.** (Dr Mangal Mishra), Department of Commerce, Devi Ahilya Vishwavidyalaya, Indore

6 Meetei, Khagokpam Dhiren **Marketing strategies in Life Insurance Corporation of India: A case study of Manipur.** (Dr G P Prasain and Prof S K Sharma), Department of Commerce, Manipur University, Imphal

7 Mohture, Devendra Maniram **Bhandara Jilhyateel bidi udyogat kam karna ya shramikanche samajik va arthik prashan: Ek abhyas.** (Dr R K Paliwal), Department of Commerce, Nagpur University, Nagpur

8 Pathan, S N **Vidarbha vibhagateel reshim udyogachi vatchal: Ek abhyas.** (Prof M A Patil), Department of Commerce, Nagpur University, Nagpur

9 Qureshi, Mohd Tariq **A study of labour relations in Indian Railways.** (Dr Qamaruddin Khan), Department of Commerce, Aligarh Muslim University, Aligarh

10 Rajendra Prasad **Strategic marketing: A case study of the S T C.** (Prof M D Agarwal), Department of Commerce, Kota Open University, Kota

11 Rana, Tej Pratap Singh **The role of co-operatives in agricultural finance of Bihar with special reference to Sitamarhi District.** (Dr S P Gautam), Department of Commerce, Babasaheb Bhimrao Ambedkar Bihar University, Muzaffarpur.

12 Singh, Sanjay Kumar **Pricing of new issues in India.** (Prof K M Upadhyay), Department of Commerce, Jamia Millia Islamia, New Delhi

13 Yendigeri Surekha Shivashankarappa. **Management of cost in handloom industry with special reference to handbloom units in Bijapur District of Karnataka State.** (Dr S S Hugar), Department of Commerce, Karnatak University, Dharwad

Home Science

1 Bhatnagar, Namita **Effect of environmental noise on the household performance of the family inmates.** (Dr Asha Patwandhan), Department of Home Science, Nagpur University, Nagpur

2 Sharma, Jyoti **The effect of nutrient supplementation on mental abilities of children.** (Dr Kamlesh Sharma), Department of Home Science, Devi Ahilya Vishwavidyalaya, Indore

Management

1 Kar, Hirak Kumar **Analytical study of management information system in the Indian Army with special emphasis on the introduction of expert systems for decision making.** (Dr R D Pathak), Department of Management, Devi Ahilya Vishwavidyalaya, Indore

2 Pande, Swati **Non durable consumer products: A study of new product launch strategies.** (Dr R D Pathak), Department of Management, Devi Ahilya Vishwavidyalaya, Indore

3 Ramaraj, P **Flexibility with user involvement in planning for M I S success: A study in Indian context.** (Prof Sushil), Department of Management Studies, Indian Institute of Technology, New Delhi

4 Singh, Seema **Comparative advertising strategy of service and non-service organizations.** (Dr R D Pathak) Department of Management, Devi Ahilya Vishwavidyalaya, Indore

UNIVERSITY OF DELHI

(FACULTY OF TECHNOLOGY)

ADMISSION NOTICE-1998

The University of Delhi will hold a **Combined Entrance Examination (CEE)** for admission to First Semester of Bachelor of Engineering Courses for the session 1998-99 in Delhi College of Engineering (DCE) and Netaji Subhas Institute of Technology (NSIT) (formerly-DIT) on Sunday, the 17th May, 1998

1. **Course and number of seats offered at DCE :**

   Electronics & Communication-40, Electrical-70, Mechanical-100, Civil-70, Production & Industrial-20, Computer-20

   Course and number of seats offered at NSIT :

   Electronics & Communication-45, Computer-45, Instrumentation & Control-45, Manufacturing Process & Automation-20

2 **Minimum Eligibility :** The candidates having Indian nationality should have passed Senior School Certificate Examination (12 year course) conducted by Central Board of Secondary Education or any other examination recognized as equivalent thereto by the University of Delhi securing 60% or more marks in the aggregate of Physics, Chemistry and Mathematics (50% or more marks for candidates belonging to SC/ST category). The candidates who are appearing in the qualifying examinations are also eligible to apply for the CEE-98

3 **Region-wise allocation of seats :**

   i) Delhi Region (the candidates passing from schools located in the National Capital Territory of Delhi). — 85%

   ii) Outside Delhi Region (the candidates passing from schools/colleges located outside the National Capital Territory of Delhi) — 15%

4 i) **Reservation of seats :** 15% seats for Scheduled Castes and 7.5% seats for Scheduled Tribes of the total seats in each Institution

   ii) 5% of total seats under Category 3(i) in each course for Children/Widows of Personnel of Armed/Para Military Forces killed/disabled in action during the hostilities are provided and are exempted from appearing in CEE Such candidates can also appear in CEE in their own interest as general candidate

5 **Examination** : The Combined Entrance Examination consists of objective type questions in Physics, Chemistry and Mathematics (Combined)

6 **Minimum Age :** 17 years on or before **1st October, 1998.**

7 **Bulletin of Information :** The Bulletin of Information containing further details, prescribed Application Form and syllabi for CEE-98 can be obtained from the sale counter of the **Faculty of Technology, Mechanical Engineering Block, Delhi College of Engineering, Kashmere Gate, Delhi-110 006** on submission of a Demand Draft of Rs. 220/- (inclusive of examination fee) on working days from Monday to Friday between 10 00 A.M and 4.00 P.M.

The Bulletin of Information can also be obtained by post by sending a Demand Draft of Rs 220/- (inclusive of examination fee). The request for supply of Bulletin of Information by post should be sent to the **Assistant Registrar, Faculty of Technology, Mechanical Engineering Block, Delhi College of Engineering, Kashmere Gate, Delhi-110 006** alongwith a self addressed envelope (size 25 cm x 17 cm) affixing postage stamps for Rs. 20/-

The Bank Draft should be in favour of the Registrar, Delhi, University, Delhi, drawn on State Bank of India, Service Branch, New Delhi (Code No. 7687). Please write your name and address at the back of the Demand Draft.

8 **Important Dates :**

   i) Sale of Bulletin of Information : w.e.f 24.02.1998 to 26.03.1998.

   ii) Last date for receipt of request for supply of Bulletin by post : 18.03.1998

   iii) Last date for receipt of completed application form : 26.03.1998

NOTES :

i) Date of declaration of CEE-98 result · 3 to 4 weeks after conduct of CEE-98.

ii) Centres of examination are located in the National Capital Territory of Delhi only.

The completed application form should be sent to the **Assistant Registrar, Faculty of Technology (University of Delhi), Mechanical Engineering Block, Delhi College of Engineering, Kashmere Gate, Delhi-110 006.**

INCOMPLETE APPLICATIONS WILL NOT BE CONSIDERED.

K.K. Panda
REGISTRAR

DELHI · 9TH FEBRUARY, 1998

BHARATI VIDYAPEETH

DEEMED UNIVERSITY, PUNE

ALL INDIA COMMON ENTRANCE TESTS

FOR ADMISSIONS TO MBBS/BDS/BAMS/BHMS AND MD/MS COURSES

CET-98

Applications are invited from eligible candidates fro All India Common Entrance Test scheduled to be held on 14th June 1998 at PUNE, NAVI MUMBAI, HYDERABAD, CHANDIGARH AND NEW DELHI for admissions to the following degree courses approved by respective Statutory Councils.

- Bachelor of Medicine and Bachelor of Surgery (MBBS)
- Bachelor of Dental Surgery (BDS)
- Bachelor of Ayurvedic Medicine and Surgery (BAMS)
- Bachelor of Homoeopathic Medicine and Surgery (BHMS)

Candidates will be selected for admission to these courses in order of merit obtained by them in the CET-98

ELIGIBILITY : The candidate applying for the CET-98 must satisfy the following requirements

1) The candidate should be an Indian national born on or before 1st January 1982
2) For admission to any of these courses the candidate should have passed HSC/ISCE or any other examination which is equivalent to 10+2 HSC examination of any recognised Board/University from any school/college situated in India after 12 years' of study
3) For admission to MBBS and BDS courses, candidate should have secured not less than 50% marks in Physics, Chemistry and Biology taken together For admission to MBBS course candidate should have passed in the subject of English with not less than 50% marks. For admission to BDS Course the candidate should have passed in English subject For admission to BAMS and BHMS courses the candidate should have secured not less than 50% marks in Physics, Chemistry and Biology taken together and should have also passed in English subject For admission to MBBS course a candidate should also obtain 50% marks in Physics, Chemistry and Biology taken together in CET-98 In respect of SC/ST candidates the marks to be obtained be read as 40% at qualifying examination and CET
4) The candidate should have passed the qualifying examination at one and the same attempt
5) Candidates fulfilling the other requirements as per Medical Council of India rules framed in 1997 are also eligible to appear for the CET-98 and subsequent admission to MBBS course
6) Candidates who have appeared and are expecting the results of the final qualifying examination are also eligible to apply for the CET-98

MEDPET-98 Admission to MD/MS courses

Medical PG Examination Entrance Test (MEDPET-98) will be held on 12th July 1998 at Pune for admissions to MD (Medicine), MD (Obst & Gynae) and MS (General Surgery)

ELIGIBILITY : 1) The candidate must be Indian national

2) The candidate must have passed MBBS or equivalent examination from any college recognised by the Medical Council of India
3) The candidate must have registered with any of the State Medical Councils in India.
4) The candidate must have completed compulsory rotating internship on or before 15-7-1998 A candidate completing compulsory rotating internship after 15-7-1998 but before 15-1-1999 are also eligible to appear for MEDPET-98 but they shall join the course in February 1999

Foreign/NRI quota : 15% seats of the P G courses [MD(Medicine), MD(Obst. & Gynae) and MS (Surgery) and MBBS/BDS/BAMS/BHMS courses are reserved for NRI/foreign candidates. Candidates belonging to this category should apply to the **Director, International Students Cell, Bharati Vidyapeeth Bhavan, L.B. Shastri Road, Pune-411 030 on or before 31st May 1998 on a perscribed form.** They need not appear for CET-98 or MEDPET-98 for admission to the respective courses

The application form and Information brochure can be obtained across the counter on payment of Rs 400/- (and Rs 425/- by post) for MBBS/BDS/BAMS/BHMS courses and for Rs 500/- (and Rs 525/- by post) for admission to MD (Medicine), MD (Obst & Gynae) and MS (Surgery) at the following places :

1) Bharati Vidyapeeth Deemed University, Bharati Vidyapeeth Bhavan, Lal Bahadur Shastri Marg, Pune-411 030 (CET Cell Contact Tel. No 0212-531317 and 535509)

2) Bharati Vidyapeeth Deemed University Medical College, Dhankawadi, Pune-411 043, (CET Cell Contact Tel No. 0212-523226)

3) Bharati Vidyapeeth's College of Engineering, Sector 7, C B D Belapada, Navi Mumbai-400 614 (CET Cell Contact Tel No 022-7571074)

4) Bharati Vidyapeeth's Institute of Management and Research, A-Block, Rohtak Road, Opp Ordnance Depot, National Highway, 10 Paschim Vihar Extension, New Delhi-110 010 (CET Cell Contact Tel No 011-5686442/5684396)

The application for admission to CET-98 should reach the undersigned on or before **25th May, 1998** by 1700 hours (or with late fee of Rs 200/- on or before **1st June 1998** by 1700 hours)

Application forms completed in all respects for admission to MEDPET should reach the undersigned on or before **30th May 1998** by 1700 hours (or with late fee of Rs 200/- on or before **5th June 1998** by 1700 hours)

The Demand drafts for payment of price of information brochure should be drawn on any Nationalised Bank in favour of **'Bharati Vidyapeeth Deemed University'** payable at Pune

B.Sc. (Nursing)—The last date for admission to this course is **15th June 1998.** Prospectus available for Rs 150/-

Registrar,
Bharati Vidyapeeth Deemed University
Bharati Vidyapeeth Bhavan,
Lal Bahadur Shastri Marg,
Pune-411 030

DEPARTMENT OF STATISTICS
GOVERNMENT OF INDIA
NSSO REPORTS/DATA AVAILABLE ON PAYMENT
Reports : Hard copies/Floppies

The following NSSO survey reports are available both in hard (printed) copies and on floppies with the Director, Survey Design and Research Division (SDRD), NSSO, 164 Gopal Lal Tagore Road, Calcutta-700 035 on payment through Demand Draft drawn in favour of 'Pay and Accounts Officer', Department of Statistics, Calcutta.

Report No.	Title of the Report	Price hard copy	Price floppy
	Unorganised Trade, NSS 46th round		
403	Small Trading units in India	Rs 150	Rs 380
403/1	State level results on small trading units in India Volume I	Rs 250	Rs 710
403/1	State level results on small trading units in India Volume II	Rs 250	Rs 710
	Land and livestock holdings, NSS 48th round		
407	Operational land holdings in India, 1991-92 Salient features	Rs 250	Rs 710
414	Seasonal variation in the operation of land holdings in India, 1991-92	Rs 250	Rs 710
	Employment and unemployment, NSS 50th round		
409	Employment and unemployment in India, 1993-94	Rs 250	Rs 710
411	Employment and unemployment situation in cities and towns of India, 1993-94	Rs 150	Rs 380
412	Economic activities and school attendance by children in India, 1993-94	Rs 150	Rs 380
416	Participation of Indian women in household work and other specified activities, 1993-94	Rs 150	Rs 380
	Consumer expenditure, NSS 50th round		
401	Key results on household consumer expenditure, 1993-94	Rs 150	Rs 380
402	Level and pattern of consumer expenditure	Rs 250	Rs 710
404	Consumption of some important commodities	Rs 250	Rs 710
405	Nutritional intake in India	Rs 250	Rs 710
410/1	Dwellings in India	Rs 250	Rs 710
410/2	Energy used by Indian Households	Rs 150	Rs 380
413	Sources of household income in India, 1993-94	Rs 150	Rs 380
415	Reported adequacy of food intake in India, 1993-94	Rs 150	Rs 380
422	Differences in level of consumption among socio-economic groups	Rs 150	Rs 380
423	IRDP assistance and participation in public works 1993-94	Rs 150	Rs 380
426	Use of durable goods by Indian households, 1993-94	Rs 150	Rs 380

NSS DATA ON CD-ROM

Following NSSO Survey Data both basic and processed are available on magnetic tapes as well as CD-ROM on payment basis

** Rd No	+ Sch No	Title	Cost of supply of data on tapes (Rs.)	Cost of supply of data on CD Basic (Rs)	Cost of supply of data on CD Processed (Rs.)
50	1 0	Household Consumer Expenditure	96340	4920	6557
50	10	Employment and Un-employment	13895	2152	2152
49	0 21	Particulars of Slum	1000	*	*
49	1 2	Housing Condition and Migration	14062	*	*
48	18 1	Land and Livestock Holdings	9479	1845	1845
48	18 2	Debt and Investment	18539	2768	3383
47	3 0	Literacy and Culture	9294	1230	1230
46	2 41 2	Trade-NDE and O AE (Trade)	18417	2153	2153
45	2 2 2	NDE and O AE (Manufacturing)	22489	3075	–
44	1 2	Housing Condition	1133	*	–
44	29 1	Level of Living of Tribals	7085	*	–
44	29 2	Economic activity of Tribals	4231	*	–
44	29 3	Particulars of Migration and Ownership of land by Non-tribals in Tribal Areas	1135	*	–
44	25 2	Particulars of construction	6375	*	–
43	1 0	Consumer Expenditure	55625	–	4305
43	10	Employment and Unemployment	19117	–	2768
42	25 1	Maternity Child Care, Family Planning and Public Distribution System	12852	–	1230
42	25 2	Participation in Primary Education,	7498	–	615
42	25 7	Utilisation of Medical Services for Illness and Injury	3343	–	615
42	27	Survey of Persons aged 60 years and Above	3789	–	615
39	12	Population, Births and Deaths Enumeration	17475	*	–
39	12 1	Population, Births and Deaths Enumeration and Re-enumeration	3526	*	–
39	1 0	Consumer Expenditure		*	–
39	10	Employment and Unemployment	–		2768

* Indicates that presently data are not available on CD ** Rd No Round Number + Sch. No Schedule Number

The above cost is applicable to all users whether within or outside the government and does not include the cost of floppy/CD-ROM and which will be charged from the users @ Rs. 70/- per CD or Rs. 29/- per floppy depending upon number of CDs/Floppies required. Alternatively the user can supply his/her own floppy/CD-ROM. In case of supply of data on tapes, the tapes will have to be provided by the user. The cost of postage will be extra. when the data are sent through post to the user. Vol. I and Vol. II of instructions to field staff when available on computer media at the Computer Centre will also be supplied along with the data and cost of the same will be Rs. 70/-. The payment for supply of data will be made through only Demand Draft drawn in favour of 'Pay and Accounts Officer, Department of Statistics' payable at Delhi. The request for the data should be made to the Chief Executive Officer (CEO), National Sample Survey Organisation, Department of Statistics, Government of India, Sardar Patel Bhavan, Sansad Marg, New Delhi-110001 and after getting the CEO's approval the draft and CD/Tapes should be deposited with the Executive Director, Computer Centre, Department of Statistics, Government of India, East Block-10, R.K. Puram, New Delhi-110066.

NCERT

Applications are invited from Indian Nationals for the following posts in the National Council of Educational Research and Training (NCERT) for its constituent units, namely : (1) National Institute of Education (NIE), New Delhi, (2) Regional Institutes of Education (RIEs) at Ajmer, Bhopal, Bhubaneswar and Mysore, (3) Central Institute of Educational Technology (CIET), New Delhi and (4) Pandit Sunderlal Sharma Central Institute of Vocational Eduction (PSSCIVE), Bhopal.

The NCERT is an apex National organisation concerned with all areas of work related to school education covering research and development, training, extension and dissemination.

Appointment under the NCERT carries with it the liability to serve in any of its constituents

S No	Post		Area/Specialization	No of Vacancies
1	Professor of Education		Special Education	1
2	Professor of Social Sciences Education		Political Science	1
3.	Professor of Science Education		Biology/Life Science	1
4	Professor of Educational Technology		Media Research, Evaluations and Extensions	1
5	Reader in Language Education	i)	Urdu	1
		ii)	English	1
6	Reader in Health and Physical Education			1
7	Reader in Commerce Education			2
8	Reader in Education/ Extension	i)	Early Childhood Education	1
		ii)	Elementary Education	1
		iii)	Teacher Education	1
		iv)	Educational Extension	1
		v)	Women's Studies	1
		vi)	Educational Statistics	2
		vii)	Sociology of Education	1
		viii)	Philosophy of Education	1
		ix)	Education of SCs, STs, Minorities	1
9	Reader in Science Education	i)	Botany	2
		ii)	Zoology	2
		iii)	Chemistry	1
10	Reader in Educational Technology	i)	Media Research, Evaluation & Extension	1
		ii)	Multi-media and information technology	1
		iii)	Teaching Aids/audio-video media for school education	1
11	Reader in Vocational Education	i)	Education of Disabled Visual/Hearing Impairment	1
		ii)	Home Science (Child Development/Family Resource Management)	1
		iii)	Agriculture (Animal Husbandry/Dairying)	1

S No	Post		Area/Specialization	UR	SC	ST	OBC
12	Lecturer in Education	i)	Early Childhood Education	1	—	—	—
		ii)	Elementary Education	1	—	—	—
		iii)	Education of SCs, STs, Minorities	1	—	—	1
		iv)	Women's Studies	1	—	—	1
		v)	Educational Extension	1	4	2	3
		vi)	Educational Statistics	1	—	—	—
		vii)	Educational Computing	1	—	—	—
13	Lecturer in Educational Psychology			1	—	—	1
14	Lecturer in Social Sciences Education	i)	Political Science	—	1	—	—
		ii)	Geography	1	—	—	—
		iii)	Art Education	1	—	—	—
		iv)	History	1	—	—	—
		v)	Commerce	—	1	—	—
15	Lecturer in Vocational Education	i)	Commerce (Computer Software)	1	—	—	—
		ii)	Commerce (Distributive Education)	—	—	—	1
16	Lecturer in Language Education	i)	English	1	—	—	1
		ii)	Gujarati	1	—	—	—
		iii)	Hindi	—	1	—	1
		iv)	Kannada	1	—	—	—
		v)	Oriya	1	—	—	—
		vi)	Tamil	1	—	—	—
		vii)	Telugu	1	—	—	—
		viii)	Urdu	—	—	—	1
17.	Lecturer in Science Education	i)	Chemistry	1	1	1	1
		ii)	Physics	1	—	—	—
18	Lecturer in Mathematics Education			—	—	—	1
19	Lecturer in Educational Technology	i)	Multi-media and information technology	1	—	—	—
		ii)	Audio-video media for school education	1	—	—	—
		iii)	Teaching aids	1	—	—	—
20	Libranan			1	—	—	—
21	Deputy Libranan			2	—	—	—
22.	Assistant Libranan			2	—	—	—
23	Post Graduate Teacher	i)	History	—	—	1	—
		ii)	Biology	1	—	—	—
		iii)	Commerce	1	—	—	—
		iv)	Fine Arts	—	—	—	1
		v)	Physical Education	—	—	—	1
24	Headmaster			1	—	—	—
25	Headmistress			1	—	—	—

The NCERT broadly follows the recruitment qualifications as prescribed by the University Grants Commission (UGC) for the posts of Professor, Reader, Lecturer, Librarian, Deputy Libranan, Assistant Libranan

For the post of Headmaster of the Demonstration Schools attached to the RIEs, Post-Graduate Teacher (PGT) and Headmistress, Nursery School at the Indian Institute of Technology (IIT), Delhi Campus, the NCERT follows the qualifications as prescribed by the Kendnya Vidyalaya Sangathan (KVS).

QUALIFICATIONS

For Posts at Sr. Nos. 1, 2, 3, 4 (Professor) : An eminent scholar in the concerned subject with published work of high quality, actively engaged in research, with 10 years of experience in post-graduate teaching and/or research at University, National level institutions, including experience of guiding research at doctoral level. OR An outstanding scholar with established reputation who has made significant contribution to knowledge

For posts at Sr. Nos. 5, 6, 7, 8, 9, 10, 11 (Reader) : (i) Good academic record with a doctoral degree in the relevant subject or equivalent published work Candidates from outside the University system, in addition, shall also possess at least 55% marks or an equivalent grade at the Master's degree level. (ii) Candidates should have eight years' experience of teaching and/or research

including upto 3 years for research degree and should have made some mark in the areas of scholarship evidenced by quality of publications, contribution to educational renovation, design of new courses and curricula.

For Posts at Sr. No. 12, 13, 14, 15, 16, 17, 18, 19 (Lecturer) : Good academic record with at least 55% marks or an equivalent grade at Master's degree level in the relevant subject from an Indian University or an equivalent degree from a foreign university. Candidates, besides fulfilling the above qualifications should have cleared the National Eligibility Test (NET) for Lecturer conducted by the UGC/CSIR, subject to exemption given by the UGC.

For the post of Lecturers it will be desirable that the candidate possesses, a Master's degree in the concerned subject and B.Ed./ M.Ed. degree.

For Posts at Sr. Nos. 20 (Librarian) : (i) Master's degree in Library Science/Information Science/Documentation with at least 55% marks or its equivalent grade and a consistently good academic record; (ii) One year specialisation in an area of information technology/Archives and Manuscript keeping, or Master's degree in an area of thrust in the institution; and (iii) At least ten years as a Deputy Librarian in a University Library or 15 years' experience as a College Librarian. (iv) Evidence of innovative library services, published work and professional commitment. *Desirable :* i) M.Phil/Ph.D. degree in Library Science/Information Science/Documentation/Archives and Manuscript keeping.

For Posts at Sr. No. 21 (Deputy Librarian) : Same as for Librarian except that the candidate should have at least 8 years' experience as an Assistant University Librarian/College Librarian.

For Posts at Sr. No. 22 (Assistant Librarian) : (i) Qualifying the National Level Test conducted for the purpose by the UGC or any other agency approved by the UGC. (ii) Master's degree in Library Science/Information Science/Documentation or an equivalent professional degree with at least 55% marks or its equivalent grade plus a consistently good academic record; OR Master's degree in Arts/Science/Commerce or equivalent degree with at least 55% marks or its equivalent grade with Bachelor's degree in Library Science/Information Science/Documentation or an equivalent professional degree with at least 55% marks or its equivalent grade plus a consistently good academic record.

For Posts at Sr. No. 24 (Headmaster) : (i) At least 2nd class Master's degree (45% marks and above considered as equivalent) in any school subject. (ii) A Degree or P.G. Degree/Diploma in Teaching/Education. (iii) At least, 10 years' educational experience including at least 7 years' teaching experience at senior secondary or higher level in recognised institutions and minimum of 3 years' experience in educational administration.

Three years' experience in educational administration will be defined as under : (a) As Principal/Headmaster of a High School/ Higher Secondary/Inter College/Degree College OR (b) as Vice-Principal of a Higher Secondary School/Inter College/Degree college or Head of Department in a Degree College/University Teachers Training College. OR (c) As House Master in Public/Sanik School or as Officer in Army Education Corps. OR (d) As Assistant Headmaster of Demonstration Schools of the NCERT for 3 years or more OR (e) As Assistant Headmaster and or as PGT in Demonstration Schools of the NCERT for 15 years.

For Posts at Sr. No. 23 (PGI in Biology, History, Commerce) : *Essential :* (a) At least second class Master's degree (45% marks and above considered as equivalent) in the subject concerned. (b) University Degree/Diploma in Teaching. (c) Three years' teaching experience in a recognised school OR Integrated two years postgraduate course, M.Sc. Ed. of the R.I.Es of the NCERT. *Desirable :* Competence to teach the subject in both Hindi and English media.

For Posts at Sr. No. 23 (PGT in Fine Art) : *Essential :* Master's degree in Fine Arts (with specialisation in painting) OR Higher Secondary/Intermediate/Senior Secondary School Certificate Examination with minimum 5 years' (full time)/7 years' part-time Diploma in Fine Arts/Painting/Drawing and Painting. OR Graduate with Fine Arts/Art/Drawing and painting as one of the subjects with minimum 4 years' Diploma. *Desirable :* Degree/Diploma in teaching.

For Posts at Sr. No. 23 (PGT in Physical Education) : Master's Degree in the subject concerned from a recognised university.

For Posts at Sr. No. 25 (Headmistress) : Qualifications : *Essential :* A good Post-Graduate Degree in Arts or Science. Certificate or Diploma in Pre-School/Nursery/Kindergarten Education. At least three years' teaching experience in the field of pre-primary education. *Desirable :* A degree or diploma in Education. Knowledge of Hindi and English. Knowledge of stories, songs, games and other play activities for children, ability to sing and play on musical instruments.

SCALE OF PAY :

1.	Professor/Librarian	Rs. 4500-7300
2.	Reader/Deputy Librarian	Rs. 3700-5700
3.	Lecturer/Assistant Librarian	Rs. 2200-4000
4.	Headmaster	Rs. 2000-3500
5.	P.G.T.	Rs. 1640-2900 Age : Below 40 years
6.	Headmistress	Rs. 1640-2900 Age : Below 35 years

Note : 1. For the post of Professor of Education (Special Education), the candidates should have published research work in the area of education of children with special needs, including various aspects of education of children with different disabilities. 2. For the post of Reader in Education (Teacher Education), candidates should have experience in the development of training materials in print as well as audio-visual formats and organisation of in service teacher education programme through Distance Mode. Experience in planning and execution of extension activities in school education for teachers, students and parents. 3. For the posts of Reader/Lecturer with specialisation in Educational Statistics, candidates should have specialization in Sample Survey methods, planning and conducting large scale census surveys modern statistical technique of data analysis, etc. 4. For the post of Lecturer in Early Childhood Education (ECE), Post-Graduate degree in Child Development/Sociology/Child Psychology and experience in research and curriculum development as well as professional training in ECE is desirable. 5. For the post of Lecturer in Elementary Education, Post-Graduate degree in Education/Psychology/Sociology/Child Psychology and experience in research/curriculum development in elementary education and training is desirable. 6. For one of the posts of Lecturer in Education in the area of education of socially disadvantaged groups, candidate should have basic qualifications and research work in the area of specialization. For the other post the candidate should have worked in the field of education of minorities and good understanding of the educational programmes and institutions run by the minority institutions. Functional knowledge of Urdu is necessary. 7. For the post of Lecturer in Educational Computing, proficiency in programming, experience in designing web pages for the Internet is desirable. 8. For the post of Lecturer in English, a Post-Graduate Diploma in English Language/English Language Teaching from Central Institute of English and Foreign Language (CIEFL), Hyderabad or Regional Institute of English (RIE), Bangalore/Chandigarh/Vallabh Vidyanagar/Calcutta is desirable. 9. For the post of Lecturer in Geography, familiarity with cartographic techniques and computer graphics is desirable. 10. For the post of PGT (a) Teaching experience is relaxable for non-teaching employees of the Council. (b) In case of candidates possessing first class Master's degree as well as first class Bachelor's degree essential qualifications (b) and (c) shall be relaxed for a limited period. A candidate

thus selected will be placed on trial for a period of two years which may be extended by one more year if the candidate is not able to acquire teaching degree/diploma within the stipulated period of two years or his/her performance is not considered satisfactory by the Competent Authority and will be continued further subject to his/her acquiring teaching degree and also satisfactory performance during this period.

GENERAL INFORMATION : (a) All the posts are inter-disciplinary with Education. (b) The Post Graduate Degree in the relevant subject should be in the area of specialisation of the posts wherever applicable. (c) Age concession allowed for SC/ST/OBC candidates, displaced persons and ex-servicemen as per Government of India instructions. There is no age limit for NCERT employees. (d) The number of vacancies in each subject is tentative and is subject to change. (e) If a candidate is found to be of exceptional merit, relaxation of qualifications, experience, age, etc. may be given by the Selection Committee. (f) The prescribed qualifications are just the minimum and mere possession of the same does not entitle candidates to be called for interview. (g) Those employed in Govt./Semi-Govt./Autonomous Organisations should send their applications through proper channel. (h) Benefit of added years of service may be given to eligible employees as per Rule 30 of the CCS (Pension) Rules. (i) Candidates who wish to be considered for appointment on deputation/short-term basis against the above mentioned posts may also apply through their respective institutions provided they fulfil the prescribed qualifications.

Applications on plain paper duly typed, giving the following particulars, postal order number and bio-data may be sent to the address given below :

(a) Post applied for (2) Full name of the applicant (in capital letters) (3) Complete Postal address, (4) Date of birth, (5) Whether belongs to Scheduled Caste/Scheduled Tribes/Ex-serviceman/ Physically Handicapped/OBC. (6) Educational/Professional qualifications may be given in a tabular form as indicated below :

Examination or Degree	Class or Division	Percentage of marks obtained	Year	Subject(s) taken	Name of the Univ./Board

7. Details of published work, indicating books, articles, monographs and papers. 8. Experience (Give full particulars of past and present nature of employment in chronological order) :

Full address of the Institution	Post held	From To	Scale of pay drawn	Basic pay	Other allowances	Whether post held permanently/on probation/ temporary	Reasons for leaving

9. Describe the specific experience gained during your employment which has a bearing on the post applied for. 10. Certified that the particulars given above are true to the best of my knowledge and belief.

Signature of the candidate

Applications alongwith bio-data, attested copies of certificates of qualifications, experience, etc. and a crossed Indian Postal Order for Rs. 10/- (not required from SC/ST candidates and Council employees) in favour of the **Secretary, NCERT,** should reach by **5.3.1998.** Applications with bio-data received without prescribed fee and/or received after the closing date will not be entertained.

davp 97/709

CLASSIFIED ADVERTISEMENTS

JAMIA MILLIA ISLAMIA

NEW DELHI-110 025

Advt. No. 9/1997-98

Director, Balak Mata Centres, Matia Mahal, Delhi.

Applications are invited for the above post from women candidates only in the pay scale of Rs 1640-2900 by **09/03/1998** having 2 years of experience in teaching and administration of Balwadis and Adult Education Centres alongwith a Masters Degree and Degree in Teaching or recognized diploma in child development/extension education and knowledge of Urdu.

The prescribed application forms together with the detailed information/qualifications can be obtained from Asstt. Registrar (Recruitment), Jamia Millia Islamia, New Delhi-110 025 either personally or by sending self addressed stamped envelope worth Rs 4/- (ordinary post) and Rs 12/- (registered post) with the payment of Rs 50/- (Rs 20 for SC/ST candidates) drawn in favour of Jamia Millia Islamia, New Delhi

Prof. Anisur Rehman
Dated : 09.02.1998 OFFTG. REGISTRAR

NATIONAL INSTITUTE OF NUTRITION

(Indian Council of Medical Research)
Jamai-Osmania P.O., Hyderabad-500 007

Nine-month M.Sc. (Applied Nutrition) Course for persons possessing M B.,B S., or M.Sc. (Biochemistry/Physiology) will commence from 1st June 1998 Inservice candidates are eligible For details, contact Director, National Institute of Nutrition, Jamai-Osmania P.O , Hyderabad-500 007 (Telephone No 7018234)

Date : 13.1.1998 **DIRECTOR**

INDIAN COUNCIL OF MEDICAL RESEARCH

Nominations/applications are invited from distinguished retiring Scientists engaged in research in the field of biomedicine for consideration for appointment as Emeritus Medical Scientist under the Council. Full particulars can be obtained from the office of the Director General, (Personnel Section), Indian Council of Medical Research, Post Box No. 4911, New Delhi-110 029 Scientists who have retired or are going to retire upto 30th Sept., 1998 may apply for the appointment as Emeritus Medical Scientist under the Council. Those who had applied earlier in response to ICMR Advertisement in Sept., 1997 need not apply again as their applications will also be considered.

Last date for receipt of applications is **31st March, 1998.**

—davp 1301(3)97

सम्पूर्णानन्द संस्कृत विश्वविद्यालय, वाराणसी

जन./164/108/94-98

विज्ञापन संख्या-1/98

दिनांक 31.1.1998

अधोलिखित पदों पर नियुक्ति हेतु निर्धारित प्रपत्र पर आवेदन पत्र आमंत्रित किए जाते हैं जो विश्वविद्यालय कोष में रु. 30/- नगद जमा करने पर अथवा डाक द्वारा वित्त अधिकारी, सम्पूर्णानन्द संस्कृत विश्वविद्यालय, वाराणसी के नाम रु. 45/- का बैंक ड्राफ्ट/पोस्टल आर्डर भेजकर प्राप्त किए जा सकते हैं। ये आवेदन पत्र अंकपत्रों एवं प्रमाणपत्रों की प्रमाणित प्रतिलिपियों सहित रजिस्टर्ड डाक से इस प्रकार भेजे जाएं कि दिनांक **20.3.98** तक विश्वविद्यालय में अवश्य प्राप्त हो जाएं। सेवारत अभ्यर्थी अपना आवेदन पत्र अपने नियोजक के माध्यम से ही प्रेषित करें। परिवीक्षा की अवधि एक वर्ष होगी जो एक वर्ष से अनधिक काल के लिए बढ़ाई जा सकेगी।

प्राध्यापक—कुल पद 26 जिनमें से अनुसूचित जाति के लिए 6 और अन्य पिछड़ा वर्ग के लिए 7 पद आरक्षित हैं तथा 13 पद अनारक्षित हैं, जिनके विवरण निम्नलिखित हैं :

1. **प्राध्यापक**— (6 पद अनुसूचित जाति हेतु आरक्षित)

भाषा विज्ञान (ग्रीक/लैटिन), नव्यव्याकरण, सामवेद, प्राचीन इतिहास एवं पुरातत्व (इपीग्राफी), बौद्ध दर्शन, प्रत्येक में एक-एक पद स्थाई, पुराणेतिहास में एक पद अस्थाई।

2. **प्राध्यापक**— (7 पद अन्य पिछड़ा वर्ग हेतु आरक्षित)

भाषा विज्ञान (हिस्टारिकल), शिक्षाशास्त्र (मनोविज्ञान), ज्यौतिष (गणित), साहित्य, मध्ववेदान्त, अर्थशास्त्र, पालि, प्रत्येक में एक-एक पद स्थाई।

3. **प्राध्यापक**— (13 पद अनारक्षित) हिन्दी, तिब्बती भाषा, ज्यौतिष, शुक्ल यजुर्वेद, पुराणेतिहास, सांख्य-योग, रामानन्द वेदान्त, राजशास्त्र, गृह विज्ञान, पूर्व मीमांसा, ग्रन्थालय विज्ञान प्रत्येक में एक-एक पद तथा शिक्षा शास्त्र में दो पद स्थाई।

वेतनमान : रु. 2200-75-2800-100-4000

न्यूनतम अर्हताएं :

1. क्रम सं. 1 से 3 तक के पदों के लिए विश्वविद्यालय अधिनियम एवं परिनियम में वर्णित अर्हताएं अनिवार्य हैं।
2. यदि विश्वविद्यालय अनुदान आयोग द्वारा अथवा उ.प्र. शासन द्वारा साक्षात्कार के पूर्व अर्हताओं में कोई संशोधन स्वीकृत कर लिया जाता है तो संशोधित अर्हताएं लागू होंगी।

सामान्य निर्देश :

1. उक्त पदों के लिए पूर्व में दिए गए विज्ञापन के संदर्भ में प्राप्त आवेदन पत्रों पर विचार करना संभव न होगा, अत: ऐसे अभ्यर्थी पुन: आवेदन करें।
2. साक्षात्कार हेतु आहूत करने का अधिकार विश्वविद्यालय के पास सुरक्षित होगा।

कुलसचिव

सम्पूर्णानन्द संस्कृत विश्वविद्यालय, वाराणसी

जन./165/108/94-98

विज्ञापन संख्या-2/98

दिनांक 31.1.1998

अधोलिखित पदों पर नियुक्ति हेतु निर्धारित प्रपत्र पर आवेदन पत्र आमंत्रित किए जाते हैं, जो विश्वविद्यालय कोष में रु 30.00 नगद जमा करने पर अथवा डाक द्वारा वित्त अधिकारी, सम्पूर्णानन्द संस्कृत विश्वविद्यालय, वाराणसी के नाम देय रु. 45.00 का बैंक ड्राफ्ट/पोस्टल आर्डर भेज कर प्राप्त किए जा सकते हैं। ये आवेदनपत्र अंक पत्रों एवं प्रमाण पत्रों की प्रमाणित प्रतिलिपियों सहित रजिस्टर्ड डाक से इस प्रकार भेजे जाए कि दिनांक 20.3.98 तक विश्वविद्यालय में अवश्य प्राप्त हो जाएं। सेवारत अभ्यर्थी अपना आवेदन पत्र अपने नियोजक के माध्यम से ही प्रेषित करें। परिवीक्षा की अवधि एक वर्ष होगी जो एक वर्ष से अनधिक अवधि के लिए बढ़ाई जा सकेगी।

1. पुस्तकाध्यक्ष—वेतनमान रु. 4500-7300 (एक पद-स्थाई) अनारक्षित
2. निदेशक, अनुसंधान—वेतनमान रु. 4500-5700 (एक पद-स्थाई) अनारक्षित
3. उपपुस्तकाध्यक्ष—वेतनमान रु. 3700-5700 (दो पद स्थाई) अनारक्षित
4. पुस्तकालय सहायक—वेतनमान रु. 1350-2200 (आठ पद-स्थाई) (दो पद अनुसूचित जाति, दो पद अन्य पिछड़ा वर्ग हेतु आरक्षित एवं चार पद अनारक्षित)

न्यूनतम अर्हताएं :

1. **पुस्तकाध्यक्ष :**

1. पुस्तकालय विज्ञान/सूचना विज्ञान/अभिलेखीकरण में स्नातकोत्तर उपाधि कम से कम 55 प्रतिशत प्राप्तांकों सहित अथवा समकक्ष श्रेणी और अविच्छिन्न उत्तम शैक्षिक उपलब्धि।
2. सूचना प्रौद्योगिकी/अभिलेखागार एवं पांडुलिपि अनुरक्षण में एक वर्ष का विशिष्टीकरण अथवा संस्था के विशिष्टीकरण क्षेत्र में स्नातकोत्तर।
3. किसी विश्वविद्यालय पुस्तकालय में कम से कम 10 वर्ष का उपपुस्तकाध्यक्ष के रूप में अनुभव अथवा 15 वर्ष का महाविद्यालय पुस्तकाल्याध्यक्ष के रूप में अनुभव।
4. पुस्तकालय सेवा एवं संगठन के अभिनवीकरण तथा प्रकाशित कार्य का साक्ष्य।

वांछनीय :

1. पुस्तकालय विज्ञान/सूचना विज्ञान/अभिलेखीकरण/अभिलेखागार एवं पांडुलिपि अनुरक्षण में एम.फिल./पी.एच.डी उपाधि।
2. अंग्रेजी एवं हिंदी का ज्ञान।
3. हस्तलिखित ग्रंथों के संपादन का अनुभव।
4. प्राचीन भारतीय लिपियों का ज्ञान।
5. संस्कृत विद्या से संबद्ध विषयों के शोध कार्यों के पथ-प्रदर्शन का अनुभव।
6. संस्कृत, पालि अथवा प्राकृत में एम.ए. उपाधि।

2. **निदेशक अनुसंधान :**

1. पालि तथा प्राकृत के अच्छे ज्ञान तथा उत्कृष्ट शैक्षिक

क्रम के साथ प्रथम द्वितीय श्रेणी में एम.ए. अथवा आचार्य अथवा तत्समकक्ष कोई उपाधि।

2. स्नातकोत्तर अथवा आचार्य कक्षाएं पढ़ाने तथा अनुसंधान के पथ-प्रदर्शन तथा पर्यवेक्षण का कम से कम 15 वर्षों का अनुभव।
3. किसी विश्वविद्यालय या अनुसंधान संस्थान में अनुसंधान प्रकाशनों के पथ प्रदर्शन तथा पर्यवेक्षण का अनुभव।
4. अनुसंधान कार्य के संचलन तथा समन्वयक का अनुभव।
5. अच्छी अनुसंधान उपाधि अथवा ख्यातिलब्ध अनुसंधान प्रकाशन।

वांछनीय :

कम से कम दो प्रसिद्ध योरोपीय भाषाओं के परिचय

विशेष :

चयन समिति अपने विवेक पर विशेष परिस्थिति में उक्त अर्हताओं में छूट दे सकती है।

3. **उपपुस्तकाध्यक्ष :**

1. पुस्तकालय विज्ञान/सूचना विज्ञान/अभिलेखीकरण में कम से कम 55 प्रतिशत प्राप्तांकों सहित स्नातकोत्तर उपाधि अथवा समकक्ष श्रेणी और अविच्छिन्न उत्तम शैक्षिक उपलब्धि।
2. सूचना प्रौद्योगिकी/अभिलेखागार एवं पांडुलिपि अनुरक्षण के क्षेत्र में एक वर्ष का विशिष्टीकरण स्नातकोत्तर उपाधि।
3. किसी विश्वविद्यालय में सहायक पुस्तकाध्यक्ष/ महाविद्यालय पुस्तकाध्यक्ष के रूप में 8 वर्ष का अनुभव।
4. पुस्तकालय सेवा, प्रकाशित कार्य एवं व्यावसायिक प्रतिबद्धता के संबंध में साक्ष्य।

वांछनीय :

1. पुस्तकालय विज्ञान/सूचना विज्ञान अभिलेखीकरण/ अभिलेखागार एवं पांडुलिपि अनुरक्षण में एम फिल./ पी.एच.डी. उपाधि।
2. स्नातकोत्तर स्तर के संस्कृत का ज्ञान।
3. किसी विश्वविद्यालय अथवा शोध संस्थान में डाकूमेन्टेशन अथवा बिब्लियोग्राफी के कार्य का अनुभव।

4. **पुस्तकालय सहायक :**

1. पुस्तकालय विज्ञान में स्नातक अथवा तत्समकक्ष उपाधि।
2. द्वितीय श्रेणी में, शास्त्री उपाधि अथवा संस्कृत, पालि, दर्शन, इतिहास एवं संस्कृति अथवा आधुनिक भारतीय भाषा के साथ बी.ए. उपाधि।

सामान्य निर्देश :

1. उक्त पदों के लिए पूर्व में दिए गए विज्ञापन के संदर्भ में प्राप्त आवेदनपत्रों पर भी विचार किया जाएगा अत: ऐसे अभ्यर्थियों को पुन: आवेदन करने की आवश्यकता नहीं है। ऐसे अभ्यर्थी इस अवधि में अर्जित अतिरिक्त योग्यताओं अनुभव आदि का विवरण भेज सकते हैं।
2. साक्षात्कार हेतु आहूत करने का अधिकार विश्वविद्यालय के पास सुरक्षित होगा।

कुलसचिव

JAMIA MILLIA ISLAMIA

NEW DELHI-110 025

Advt. No. 8/1997-98

Applications on the prescribed form are invited for the post of **REGISTRAR** in the Scale of **Rs. 4500-7300** alongwith a self addressed and stamped envelope worth Rs. 4/- (ordinary post) Rs. 12/- for registered post. The application shall be accompanied with a crossed I.P.O./ demand draft of Rs. 50/- (Rs. 20/- for SC/ST) in favour of Jamia Millia Islamia. The application should reach the Asstt. Registrar (Recruitment), by **09/03/98** by hand/mail The qualifications for the post as prescribed by the Ministry of HRD/UGC shall be supplied along with the application form. The appointment shall be for a tenure of five years which can be renewed for similar terms.

Prof. Anisur Rehman
Dated : 09.02.1998 OFFTG. REGISTRAR

INDIAN COUNCIL OF MEDICAL RESEARCH

Applications are invited upto **20th March, 1998** for the posts of **Director** at the following Institute/Centre of the Council :

(A) **AT THE INSTITUTE OF PATHOLOGY, NEW DELHI :** This Institute is primarily devoted to research on the Pathology of major health problems of the country including diagnostic and referral services. Promotion of audiovisual technology for medical education has been a major responsibility of the Institute. The Institute being located in close proximity to major hospitals gets the benefit of extensive clinical material for its research activities. The Institute has modern equipments and other infrastructural facilities for conducting state of art research in biomedical services.

Qualifications & Experience Essential : 1) M.B.B.S. with a Doctorate in Pathology of a recognised university with 15 years experience in research/teaching in Pathology with original work to the credit of the candidate (as evidenced by scientific publications in standard journals). **Desirable :** Administrative experience in responsible positions

(B) **AT THE MALARIA RESEARCH CENTRE, DELHI :** The Malaria Research Centre (MRC) carries out multidisciplinary research on various aspects of malaria. It is engaged in surveys in endemic areas, field research to demonstrate the feasibility of bioenvironmental methods on malaria control, studies on vector biology, biological control of vectors and transmission dynamics of malaria and on both basic and applied research including application of molecular biological methods. The MRC also conducts drug trials, toxicity studies, evaluation of diagnostic tests and newer insecticides and repellents The Centre also collaborates with other organizations/Institutes in carrying out studies in malaria.

Qualification & Experience : Essential : Doctorate Degree like M.D., Ph.D., D.Sc , or equivalent post-graduate qualifications of a recognised university with 15 years experience in research/teaching in the field of Malaria or Arthropod borne diseases with original work to the credit of candidate (as evidenced by scientific publications in standard journals.) **Desirable :** Experience in Research/Administration in responsible positions.

Job Requirements : (For both the above posts). These are top research management posts concerned with research on Pathology/Malaria, respectively. The incumbent is expected to formulate and conduct research programmes and also collaborate with reputed Institutes in India and abroad. The Director also has to interact with various State Health Authorities for investigating outbreakes of specific diseases. He/She should have the leadership quality for taking over all responsibility for research and managerial function within the framework of the ICMR System and for ensuring a congenial atmosphere for conducive for creative research.

Salary/conditions of service : The scale of pay attached to the post is Rs. 18400-500-22400 (revised) plus allowances as per Central Govt. rules and NPA for medical graduates only. Higher initial pay can also be considered. Medical aid and leave travel concession are also permissible for the employees and his/her family as per govt. rules.

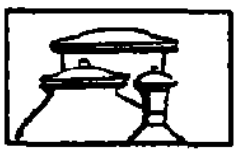
Age : Below 50 years. SC/ST candidates allowed relaxation in accordance with the Govt of India rules in force. Benefits of pension is admissible/ Private practice is not allowed. However, NPA as per Rules of the Council is admissible to medical graduates only. Application forms and other details are obtainable from the Office of the Director General, Indian Council of Medical Research, Post Box No. 4911, Ansari Nagar, New Delhi-110 029 Forms duly completed should be sent to the DG, ICMR, New Delhi-110 029, with a crossed IPO for Rs. 8/- payable to DG, ICMR, New Delhi, (SC/ST candidates are exempted from this payment). Incomplete/late applications or without postal orders will not be entertained **Any canvassing by or on behalf of the candidates or to bring political or other outside influence with regard to selection/recruitment shall be a disqualification.**

—davp 1301(5)97

Protect Yourself From VIRAL HEPATITIS (Jaundice)

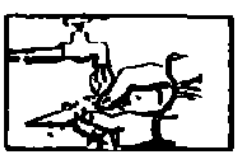
Outbreaks of Hepatitis are usually caused by Hepatitis Virus, which spread through contaminated water and food products.

Protect yourself from infection by :



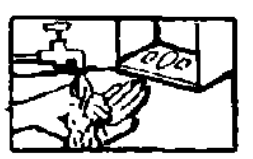
Drinking safe water stored in a clean, covered and narrow mouthed container.

Not eating cut fruits and vegetables from the market.



Thoroughly washing fruits and vegetables eaten raw.

Washing hands before eating



Washing hands after using toilet

Hepatitis 'B' and 'C' viruses are spread through body fluids of patients or carriers; protect yourself by:

- ☆ Ensuring that a separate sterile syringe with a separate sterile needle is used for each injection Insist that a glass syringe and needle are boiled for 20 minutes before use
- ☆ Taking injections only when prescribed by a qualified medical person
- ☆ Getting surgical interventions done at hospitals of repute where aseptic precautions are given utmost priority
- ☆ Using condoms and avoiding unsafe sex
- ☆ Obtaining blood for transfusion from a registered blood bank, where screening of Hepatitis 'B' is done

Note :

- ☆ In case of broken water pipes in your area, report immediately to the nearest Municipal Authority
- ☆ Report immediately a case of jaundice in your area to the nearest Health Centre.
- ☆ Hepatitis 'B' vaccine is availabe in market Consult your doctor about its use

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